

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS  
BOARD ACTION SUMMARY

DEPT: Environmental Resources

BOARD AGENDA #: \*B-4

AGENDA DATE: December 20, 2016

**SUBJECT:**

Approval to Enter into a Contract for Professional Design Services with Geo-Logic Associates, Inc., for Construction Quality Assurance Services during the Construction of Fink Road Landfill's Class II LF-3 Cell 4 Base Liner and Leachate Collection System

**BOARD ACTION AS FOLLOWS:**

No. 2016-648

On motion of Supervisor O'Brien, Seconded by Supervisor Withrow  
and approved by the following vote,

Ayes: Supervisors: O'Brien, Chiesa, Withrow, DeMartini, and Chairman Monteith

Noes: Supervisors: None

Excused or Absent: Supervisors: None

Abstaining: Supervisor: None

1)  Approved as recommended

2)  Denied

3)  Approved as amended

4)  Other:

MOTION:

ATTEST:

  
PAM VILLARREAL, Assistant Clerk

File No.

**THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS  
AGENDA ITEM**

DEPT: Environmental Resources  
Urgent  Routine

BOARD AGENDA #: \*B-4

AGENDA DATE: December 20, 2016

CEO CONCURRENCE: *pht*

4/5 Vote Required: Yes  No

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**SUBJECT:**

Approval to Enter into a Contract for Professional Design Services with Geo-Logic Associates, Inc., for Construction Quality Assurance Services during the Construction of Fink Road Landfill's Class II LF-3 Cell 4 Base Liner and Leachate Collection System

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**STAFF RECOMMENDATIONS:**

1. Approve the Professional Design Services Agreement No. A102416 with Geo-Logic Associates, Inc., for Construction Quality Assurance services during Construction of the Fink Road Landfill's Class II LF-3 Cell 4 Base Liner and Leachate Collection System, for a not to exceed amount of \$132,874.
2. Authorize the Director of Environmental Resources, or designee, to execute the Agreement with Geo-Logic Associates, Inc., and to sign any necessary documents.
3. Authorize the Director of Environmental Resources, or designee, to sign amendments to the Agreement for an overall total not-to-exceed amount of \$146,161, which includes a contingency of \$13,287.

**DISCUSSION:**

The Department of Environmental Resources (DER), Landfill Division, maintains and operates the Fink Road and Geer Road Landfills. The day-to-day operation and maintenance of the Fink Road Landfill is performed by in-house staff, however, specialized services and expertise are needed in the area of construction quality assurance (CQA) and related work necessary to construct a Class II LF-3 Cell 4 Base Liner and Leachate Collection System at the Fink Road Landfill.

The Fink Road Landfill is currently disposing of Class II Municipal Solid Waste (MSW) in Landfill 3, Cell Number 3. Class II MSW consists of ash that is generated by the on-site Covanta Waste to Energy Plant. It is estimated that this cell has less than one year of disposal capacity remaining, however, a limited amount of capacity also remains in Cells 1 and 2. The new cell currently being designed is within the existing landfill permitted area and is referred to as Landfill 3, Cell Number 4. This Cell will provide approximately ten years of disposal capacity of Ash Monofill for the County. It is anticipated that this cell will be ready for use by 2017.

Approval to Enter into a Contract for Professional Design Services with Geo-Logic Associates, Inc., for Construction Quality Assurance Services during the Construction of Fink Road Landfill's Class II LF-3 Cell 4 Base Liner and Leachate Collection System

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In preparation for the upcoming construction of Cell 4, The Department of Environmental Resources, in partnership with the General Services Agency (GSA) Purchasing Division, issued a Request for Proposal (RFP) on August 19, 2016, for this project. The RFP period closed on September 22, 2016, and the GSA Purchasing Division conducted the opening of the proposals on the closing date.

On September 22, 2016, two consultants submitted their qualifications for review. All consultants were evaluated and scored on qualifications only. The consultants' proposed rates were included but were not part of the initial evaluation process. The consultants that submitted proposals are as follows:

1. Geo-Logic Associates, Inc.
2. SCS Engineers, Inc.

The initial evaluation was completed by an evaluation committee consisting of three evaluators: one member from the Department of Environmental Resources Landfill Division, one from the Department of Public Works, and one retired from the Department of Public Works who is currently aiding the Department of Environmental Resources in a part-time extra help position. The consultants were initially evaluated on the following criteria:

1. The Proposer's Overall Response;
2. Professional Qualifications; and
3. Understanding of the Project.

The consultants' proposed pricing was later evaluated by GSA's Purchasing Division and, along with the overall scoring from the initial evaluation, was used to rank the proposals in the following order:

Ranking	Consultant
1	Geo-Logic Associates, Inc.
2	SCS Engineers, Inc.

Environmental Resources and GSA Purchasing staff selected Geo-Logic Associates, Inc., as the most qualified consultant based on the results of the evaluation criteria. On October 27, 2016, the GSA Purchasing Division issued a letter of intent to award to Geo-Logic Associates, Inc., and contract terms have been agreed upon.

**POLICY ISSUE:**

The Fink Road Landfill services Stanislaus County and its incorporated municipalities for the disposal of solid waste. In order to remain compliant with State law and Stanislaus County's General Plan, adequate disposal capacity must be available and planned to provide for present and anticipated community growth. Board of Supervisors approval is required for all contracts exceeding \$100,000.

Approval to Enter into a Contract for Professional Design Services with Geo-Logic Associates, Inc., for Construction Quality Assurance Services during the Construction of Fink Road Landfill's Class II LF-3 Cell 4 Base Liner and Leachate Collection System

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**FISCAL IMPACT:**

The contract's not to exceed amount is \$132,874. In addition, staff is asking for a 10% contingency amount of \$13,287, for an overall not to exceed amount of \$146,161. Sufficient appropriations exist in the Fiscal Year 2016-2017 Adopted Final Budget for the Fink Road Landfill to cover the cost of these services.

<b>Cost of recommended action:</b>		\$ 146,161
<b>Source(s) of Funding:</b>		
Fink Road Landfill Fund Balance	\$ 146,161	
<b>Funding Total:</b>		<u>\$ 146,161</u>
<b>Net Cost to County General Fund</b>		<u>\$ -</u>

<b>Fiscal Year:</b>	2015-2016
<b>Budget Adjustment/Appropriations needed:</b>	No

**Fund Balance as of October 31, 2016:**  
 Fink Road Landfill \$ 26,917,469

**BOARD OF SUPERVISORS' PRIORITY:**

The recommended actions are consistent with the Board's priorities of A Safe Community, A Healthy Community, A Well Planned Infrastructure System, and the Efficient Delivery of Public Services. Landfill services are also critical to supporting the Department's mission to promote a safe and healthy environment and improve the quality of life in the community through a balance of science, education, partnerships and environmental regulation.

**STAFFING IMPACT:**

Existing staff will oversee the work related to this Agreement.

**CONTACT PERSON:**

Jami Aggers, Director of Environmental Resources Telephone: 209-525-6770

**ATTACHMENT(S):**

- A. Professional Design Services Agreement with Geo-Logic Associates, Inc.



**DEPARTMENT OF ENVIRONMENTAL RESOURCES**

3800 Cornucopia Way, Suite C

Modesto, CA 95358

Phone: (209) 525-6770

Fax: (209) 525-6773

**STANISLAUS COUNTY  
PROFESSIONAL DESIGN SERVICES AGREEMENT**

This Agreement is made and entered into by and between the County of Stanislaus, a political subdivision of the State of California, hereinafter referred to as "County" and Geologic Associates, Inc., hereinafter referred to as "Consultant" on December 20, 2016 ("The Agreement").

**NOW, THEREFORE**, for and in consideration of the mutual covenants and conditions contained herein, the parties hereby agree as follows:

**1.0 PROFESSIONAL SERVICES TO BE PROVIDED BY CONSULTANT**

1.1. Scope of Services: Consultant shall provide the professional services described in the County's Scope of Work attached hereto as Exhibit "A" and incorporated herein by reference.

1.2. Professional Practices: All professional services to be provided by Consultant pursuant to this Agreement shall be provided by personnel experienced in their respective fields and in a manner consistent with the standards of care, diligence and skill ordinarily exercised by professional consultants in similar fields and circumstances in accordance with sound professional practices. Consultant also represents that it is familiar with all laws that may affect its performance of this Agreement and shall advise County of any changes in any laws that may affect Consultant's performance of this Agreement.

1.3. Representations: Consultant represents that it has reviewed the Scope of Work and that in its professional judgment the services to be performed under this Agreement can be performed within the maximum fee set forth herein below and within the time specified in the Project Schedule attached hereto. Consultant represents that it is qualified to perform the professional services required by this Agreement and possesses the necessary licenses and permits required to perform said services. Consultant represents that it has no interest and shall not acquire any interest direct or indirect which conflicts, or has the appearance of conflicting, in any manner or degree with the performance of the work and services under this Agreement.

1.4. Compliance with Laws: Consultant agrees that it shall perform the services required by this Agreement in compliance with all applicable Federal and California laws including, but not limited to, those laws related to minimum hours and wages; occupational health and safety; fair employment and employment practices; workers' compensation insurance and safety in employment; and all other Federal, State and local laws and ordinances applicable to the services required under this Agreement.

1.5. Non-Discrimination. During the performance of this Agreement, Contractor and its officers, employees, agents, representatives or subcontractors shall not unlawfully discriminate in violation of any Federal, State or local law, rule or regulation against any employee, applicant for employment or person receiving services under this Agreement because of race, religious creed, color, national origin, ancestry, physical or mental disability, medical condition, genetic information, pregnancy related condition, marital status, gender/sex, sexual orientation, gender identity, gender expression, age (over 40), political affiliation or belief, or military and veteran status. Contractor and its officers, employees, agents, representatives or subcontractors shall comply with all applicable Federal, State and local laws and regulations related to non-discrimination and equal opportunity, including without limitation the County's non-discrimination policy; the Fair Employment and Housing Act (Government Code sections 12900 et seq.); California Labor Code sections 1101, 1102 and 1102.1; the Federal Civil Rights

Act of 1964 (P.L. 88-352), as amended; and all applicable regulations promulgated in the California Code of Regulations or the Code of Federal Regulations.

1.6. Non-Exclusive Agreement. Consultant acknowledges that County may enter into agreements with other consultants for services similar to the services that are subject to this Agreement or may have its own employees perform services similar to those services contemplated by this Agreement.

1.7. Delegation and Assignment. This is a personal service contract, and the duties set forth herein shall not be delegated or assigned to any person or entity without the prior written consent of County. Consultant may engage a subcontractor(s) as permitted by law and may employ other personnel to perform services contemplated by this Agreement at Consultant's sole cost and expense.

1.8. Covenant Against Contingent Fees. Consultant warrants that he/she has not employed or retained any company or person, other than a bona fide employee working for the consultant; to solicit or secure this agreement; and that he/she has not paid or agreed to pay any company or person other than a bona fide employee, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award, or formation of this agreement. For breach or violation of this warranty, the local agency shall have the right to annul this agreement without liability, or at its discretion; to deduct from the agreement price or consideration, or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

## 2.0 COMPENSATION AND BILLING

2.1. Compensation. Consultant shall be paid in accordance with the fee schedule set forth in Exhibit "C", attached hereto and made a part of this Agreement (the "Fee Schedule"). Consultant's compensation shall in no case exceed **One Hundred Thirty-Two Thousand, Eight Hundred Seventy-Four Dollars (\$132,874.00)**. Consultant will be compensated on a time and materials basis, based on the hours worked by the Consultant's employees or subcontractors at the hourly rates specified in the Fee Schedule. The Fee Schedule rates include direct salary costs, employee benefits, and overhead. The rates stated in the Fee Schedule are not adjustable during the term of this Agreement. The County may retain ten percent of all periodic or progress payments made to the Consultant until completion and acceptance of all work tasks and County shall have right to withhold payment from Consultant for any unsatisfactory service until such time service is performed satisfactorily.

2.2. Reimbursements. In addition to the aforementioned fees, Consultant will be reimbursed for any expenses specifically set forth in each Project Scope of Work. All such reimbursement amounts are limited to those costs and expenses that are reasonable, necessary and actually incurred by the Consultant in connection with the services provided. The County shall not pay a mark up on any item of reimbursement. The County shall not pay for any item of overhead such as telephone, facsimile, postage, etc. All requests for reimbursement shall be accompanied by a copy of the original invoice.

2.3. Additional Services. Consultant shall not receive compensation for any services provided outside the scope of services specified in Exhibit A unless the County or the Project Manager for this Project, prior to Consultant performing the additional services, approves such additional services in writing. It is specifically understood that oral requests and/or approvals of such additional services or additional compensation shall be barred and are unenforceable.

2.4. Method of Billing. Consultant may submit invoices to County's Project Manager for approval on a progress basis, but no more often than once each calendar month. Said invoice shall be based on the total of all Consultants' services that have been completed to County's sole satisfaction. County shall pay Consultant's invoice within forty-five (45) days from the date County receives said invoice. Each invoice shall describe in detail, the services performed and the associated percentage of tasks completed. Any additional services approved and performed pursuant to this Agreement shall be

designated as "Additional Services" and shall identify the number of the authorized change order, where applicable, on all invoices.

2.5. Records and Audits. Records of Consultant's services relating to this Agreement shall be maintained in accordance with generally recognized accounting principles and shall be made available to County or its Project Manager for inspection and/or audit at mutually convenient times for a period of three (3) years from the termination of this Agreement.

### 3.0 TIME OF PERFORMANCE

3.1. Commencement and Completion of Work. The professional services to be performed pursuant to this Agreement shall commence within five (5) days after County delivers its Notice to Proceed. Said services shall be performed in strict compliance with the Project Schedule approved by County as set forth in Exhibit "D", attached hereto and incorporated herein by this reference. The Project Schedule may be amended by mutual agreement of the parties. Failure to commence work in a timely manner and/or diligently pursue work to completion may be grounds for termination of this Agreement.

3.2. Excusable Delays. Neither party shall be responsible for delays or lack of performance resulting from acts beyond the reasonable control of the party or parties. Such acts shall include, but not be limited to, acts of God, fire, strikes, material shortages, compliance with laws or regulations, riots, acts of war, or any other conditions beyond the reasonable control of a party.

### 4.0 TERM OF CONTRACT AND TERMINATION

4.1. Term. This Agreement shall commence upon approval by the County's Board of Supervisors and continue until the work required herein is completed, unless previously terminated as provided herein or as otherwise agreed to in writing by the parties.

4.2. Notice of Termination. The County reserves and has the right and privilege of canceling, suspending or abandoning the execution of all or any part of the work contemplated by this Agreement, with or without cause, at any time, by providing written notice to Consultant. The termination of this Agreement shall be deemed effective upon receipt of the notice of termination. In the event of such termination, Consultant shall immediately stop rendering services under this Agreement unless directed otherwise by the County.

4.3. Compensation. In the event of termination, County shall pay Consultant for reasonable costs incurred and professional services satisfactorily performed up to and including the date of County's written notice of termination. Compensation for work in progress shall be prorated as to the percentage of work completed as of the effective date of termination in accordance with the fees set forth in Exhibit "C". In ascertaining the professional services actually rendered hereunder up to the effective date of termination of this Agreement, consideration shall be given to both completed work and work in progress, to complete and incomplete drawings, and to other documents pertaining to the services contemplated herein whether delivered to the County or in the possession of the Consultant.

4.4. Documents. In the event of termination of this Agreement, all documents prepared by Consultant in its performance of this Agreement including, but not limited to, finished or unfinished design, development and construction documents, data studies, drawings, maps and reports, shall be delivered to the County within ten (10) days of delivery of termination notice to Consultant, at no cost to County. Any use of uncompleted documents without specific written authorization from Consultant shall be at County's sole risk and without liability or legal expense to Consultant.

## 5.0 INSURANCE REQUIREMENTS

Coverage Required: Contractor shall obtain, and maintain at all times during the term of this Agreement, insurance coverage in the amounts and coverage specified in the attached "Exhibit B."

## 6.0 INDEMNIFICATION

6.1. Indemnification: To the fullest extent allowed by law, Consultant shall defend, indemnify, and hold harmless the County and its officers, directors, officials, agents, employees, volunteers and representatives (collectively, "Indemnitee") from and against any and all claims, suits, actions, losses, injuries, damages or expenses of every name, kind, and description, including litigation costs and reasonable attorney's fees incurred, (collectively, "losses") which are founded upon, arise out of, pertain to, or relate to, directly or indirectly, in whole or in part, the alleged negligence, recklessness, or willful misconduct of Consultant, its officers, agents, employees, volunteers, representatives, contractors and subcontractors, excluding, however, such liabilities caused in part by the sole negligence, active negligence or willful misconduct of the County, its agents, employees, and representatives. These indemnification obligations shall not be limited by any assertion or finding that (1) the person or entity indemnified is liable by reason of non-delegable duty, or (2) the losses were caused in part by the negligence of, breach of contract by, or violation of law by Indemnitee. Nothing in this Agreement, including the provisions of this paragraph, shall constitute a waiver or limitation of any rights which Indemnitee may have under applicable law, including without limitation, the right to implied indemnity.

6.2. Duty to Defend: The duty of Consultant to indemnify and save harmless as set forth herein, shall include both the duty to indemnify and at Consultant's own cost and expense the duty to defend as set forth in Section 2778 of the California Civil Code and as limited in section 2782.8 of the California Civil Code. This duty to defend arises immediately when such claim is made and shall be independent of any finding of negligence and shall arise regardless of any claim or assertion that Indemnitee caused or contributed to the Losses. Consultant shall provide legal counsel acceptable to the County.

6.3. Duty to Cooperate: Each party shall notify the other party within ten (10) days in writing of any claim or damage related to activities performed under this Agreement. The parties shall cooperate with each other in the investigation and disposition of any claim arising out of the activities under this Agreement. Specifically, Consultant shall take all steps necessary to assist the County in the defense of any claim brought by a contractor hired to construct the Project regarding any errors, flaws, and/or omissions in the plans or specifications of the Project.

6.4. Patent Rights: Consultant represents that professional services provided by Consultant pursuant to this Agreement does not infringe on any other copyrighted work. Consultant shall defend, indemnify and hold harmless the County from all loss, cost, damage, expense, liability or claims, including attorneys' fees, court costs, litigation expenses and expert consultant or witness fees, that may at any time arise for any infringement of the patent rights, copyright, trade secret, trade name, trademark, service mark or any other proprietary right of any person or persons in consequence of the use by the County of any articles or services supplied under this agreement.

6.5. The foregoing provisions shall survive the term and termination of this Agreement.

## 7.0 GENERAL PROVISIONS

7.1. Entire Agreement: This Agreement constitutes the entire Agreement between the parties with respect to any matter referenced herein and supersedes any and all other prior writings and oral negotiations. This Agreement may be modified only in writing, and signed by the parties in interest at the time of such modification. The terms of this Agreement shall prevail over any inconsistent provision in any other contract document appurtenant hereto, including exhibits to this Agreement.



7.2. Representatives. The Director of the Stanislaus County Department of Environmental Resources, or his designee, shall be the representative of County for purposes of this Agreement and may issue all consents, approvals, directives and agreements on behalf of the County, called for by this Agreement, except as otherwise expressly provided in this Agreement. Consultant shall designate a representative for purposes of this Agreement who shall be authorized to issue all consents, approvals, directives and agreements on behalf of Consultant called for by this Agreement, except as otherwise expressly provided in this Agreement.

7.3. Project Managers. County shall designate a Project Manager to work directly with Consultant in the performance of this Agreement. Consultant shall designate a Project Manager who shall represent it and be its agent in all consultations with County during the term of this Agreement. Consultant or its Project Manager shall attend and assist in all coordination meetings called by County.

7.4. Designated Personnel: A material covenant of this agreement is that the Consultant shall assign the individuals designated below to perform the functions designated so long as they continue in the employ of the Consultant. The designated individuals shall, so long as their performance continues to be acceptable to County, remain in charge of the services for the Project from beginning through completion of services.

- a. Project Manager: Monte Christie, PE, GE; and
- b. Alternate to Project Manager: Jake Russel, PE

7.5. Removal of Personnel or Sub-Consultants: If the County, in its sole discretion at any time during the term of this agreement, desires the removal of any person or sub-consultant assigned by Consultant to perform services, then the Consultant shall remove such person or consultant immediately upon receiving notice from the County.

7.6. Notices: Any notices, documents, correspondence or other communications concerning this Agreement or the work hereunder may be provided by personal delivery, facsimile or mail and shall be addressed as set forth below. Such communication shall be deemed served or delivered: a) at the time of delivery if such communication is sent by personal delivery; b) at the time of transmission if such communication is sent by facsimile; and c) 48 hours after deposit in the U.S. Mail as reflected by the official U.S. postmark if such communication is sent through regular United States mail.

**If to County:**  
Stanislaus County  
Department of Environmental Resources  
Attn: Stephanie Musso  
3800 Cornucopia Way, Suite C  
Modesto, California 95358  
Phone: (209) 525-6786  
Fax: (209) 525-6773  
E-Mail: [smusso@envres.org](mailto:smusso@envres.org)

**If to Consultant:**  
Geo-Logic Associates, Inc.  
Attn: Monte Christie  
Project Manager  
143E Spring Hill Drive  
Grass Valley, CA 95945  
Phone: (530) 272-2448  
Fax: (530) 272-8533  
E-Mail: [mchristie@geo-logic.com](mailto:mchristie@geo-logic.com)

7.7. Attorneys' Fees: In the event that litigation is brought by any party in connection with this Agreement, the prevailing party shall be entitled to recover from the opposing party all costs and expenses, including reasonable attorneys' fees, incurred by the prevailing party in the exercise of any of its rights or remedies hereunder or the enforcement of any of the terms, conditions, or provisions hereof.

7.8. Governing Law: This Agreement shall be governed by and construed under the laws of the State of California without giving effect to that body of laws pertaining to conflict of laws. In the event of any legal action to enforce or interpret this Agreement, the parties hereto agree that the sole and exclusive venue shall be a court of competent jurisdiction located in Stanislaus County, California.

7.9. Assignment: Consultant shall not voluntarily or by operation of law assign, transfer, sublet

or encumber all or any part of Consultant's interest in this Agreement without County's prior written consent. Any attempted assignment, transfer, subletting or encumbrance shall be void and shall constitute a breach of this Agreement and cause for termination of this Agreement. Regardless of County's consent, no subletting or assignment shall release Consultant of Consultant's obligation to perform all other obligations to be performed by Consultant hereunder for the term of this Agreement.

7.10. Independent Contractor: Consultant is and shall be acting at all times as an independent contractor and not as an employee of County. Consultant shall secure, at his expense, and be responsible for any and all payment of Income Tax, Social Security, State Disability Insurance Compensation, Unemployment Compensation, and other payroll deductions for Consultant and its officers, agents, and employees, and all business licenses, if any are required, in connection with the services to be performed hereunder. Consultant hereby indemnifies and holds County harmless from any and all claims that may be made against County based upon any contention by any third party that an employer-employee relationship exists by reason of this Agreement.

7.11. Confidentiality: The Consultant agrees to keep confidential all information obtained or learned during the course of furnishing services under this Agreement and to not disclose or reveal such information for any purpose not directly connected with the matter for which services are provided.

7.12. Ownership of Documents: Any interest, including copyright interests, of Consultant or its contractors or subconsultants in studies, reports, memoranda, computational sheets, drawings, plans or any other documents, including electronic data, prepared in connection with the Services, shall be the property of County. To the extent permitted by law, work product produced under this Agreement shall be deemed works for hire and all copyrights in such works shall be the property of the County. In the event that it is ever determined that any works created by Consultant or its subconsultants under this Agreement are not works for hire, Consultant hereby assigns to County all copyrights to such works. With the County's prior written approval, Consultant may retain and use copies of such works for reference and as documentation of experience and capabilities.

7.13. Reuse of Design Documents: Should the County desire to reuse the documents specified above and not use the services of the Consultant, then the County agrees to require the new consultant to assume any and all obligations for the reuse of the documents, and the County releases Consultant and its subconsultants from all liability associated with the reuse of such documents.

7.14. Public Records Act Disclosure: Consultant has been advised and is aware that all reports, documents, information and data including, but not limited to, computer tapes, discs or files furnished or prepared by Consultant, or any of its subcontractors, and provided to County may be subject to public disclosure as required by the California Public Records Act (California Government Code Section 6250 et. seq.). Exceptions to public disclosure may be those documents or information that qualifies as trade secrets, as that term is defined in the California Government Code Section 6254.7, and of which Consultant informs County of such trade secret. The County will endeavor to maintain as confidential all information obtained by it that is designated as a trade secret. The County shall not, in any way, be liable or responsible for the disclosure of any trade secret including, without limitation, those records so marked if disclosure is deemed to be required by law or by order of the Court.

7.15. Responsibility for Errors: Consultant shall be responsible for its work and results under this Agreement. Consultant, when requested, shall furnish clarification and/or explanation as may be required by the County's representative, regarding any services rendered under this Agreement at no additional cost to County. In the event that an error or omission attributable to Consultant occurs, then Consultant shall, at no cost to County, provide all necessary design drawings, estimates and other Consultant professional services necessary to rectify and correct the matter to the sole satisfaction of County and to participate in any meeting required with regard to the correction.

7.16. Order of Precedence: In the event of an inconsistency in this Agreement and any of the attached Exhibits, the terms set forth in this Agreement shall prevail. If, and to the extent this Agreement

incorporates by reference any provision of the RFP or the Response, such provision shall be deemed a part of this Agreement. Nevertheless, if there is any conflict among the terms and conditions of this Agreement and those of any such provision or provisions so incorporated by reference, this Agreement shall govern over both the Response and the RFP and the Response shall govern over the RFP.

7.17. Costs: Each party shall bear its own costs and fees incurred in the preparation and negotiation of this Agreement and in the performance of its obligations hereunder except as expressly provided herein.

7.18. No Third Party Beneficiary Rights: This Agreement is entered into for the sole benefit of County and Consultant and no other parties are intended to be direct or incidental beneficiaries of this Agreement and no third party shall have any right in, under or to this Agreement.

7.19. Construction: The parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises with respect to this Agreement, this Agreement shall be construed as if drafted jointly by the parties and in accordance with its fair meaning. There shall be no presumption or burden of proof favoring or disfavoring any party by virtue of the authorship of any of the provisions of this Agreement.

7.20. Amendments: This Agreement may be amend only by a writing executed by the parties hereto or their respective successors and assigns.

7.21. Waiver: The delay or failure of either party at any time to require performance or compliance by the other of any of its obligations or agreements shall in no way be deemed a waiver of those rights to require such performance or compliance. No waiver of any provision of this Agreement shall be effective unless in writing and signed by a duly authorized representative of the party against whom enforcement of a waiver is sought. The waiver of any right or remedy in respect to any occurrence or event shall not be deemed a waiver of any right or remedy in respect to any other occurrence or event, nor shall any waiver constitute a continuing waiver.

7.22. Severability: If any provision of this Agreement is determined by a court of competent jurisdiction to be unenforceable in any circumstance, such determination shall not affect the validity or enforceability of the remaining terms and provisions hereof or of the offending provision in any other circumstance. Notwithstanding the foregoing, if the value of this Agreement, based upon the substantial benefit of the bargain for any party is materially impaired, which determination as made by the presiding court or arbitrator of competent jurisdiction shall be binding, then both parties agree to substitute such provision(s) through good faith negotiations.

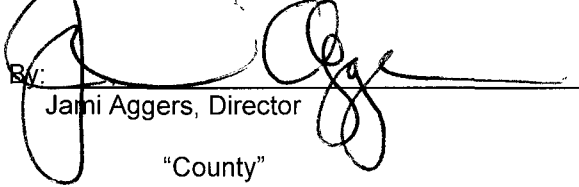
7.23. Counterparts: This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

7.24. Corporate Authority: The persons executing this Agreement on behalf of the parties hereto warrant that they are duly authorized to execute this Agreement on behalf of said parties and that by doing so, the parties hereto are formally bound to the provisions of this Agreement.

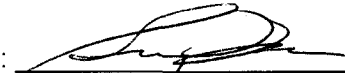
[Signatures appear on next page]

**IN WITNESS WHEREOF**, the parties hereto have caused this Agreement to be executed by and through their respective authorized officers:

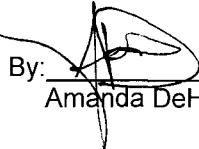
**COUNTY OF STANISLAUS**  
Department of Environmental Resources

By:   
\_\_\_\_\_  
Jami Aggers, Director  
"County"

**GEO-LOGIC ASSOCIATES, INC.**

By:   
\_\_\_\_\_  
John Hower, PG, GEG  
Executive Vice President  
Gary L. Larsen  
CEO  
"Consultant"

APPROVED AS TO FORM:  
John P. Doering, County Counsel

By:   
\_\_\_\_\_  
Amanda DeHart, Deputy County Counsel

## **EXHIBIT A SCOPE OF WORK**

### **A. BACKGROUND**

The Fink Road Landfill site is located in western Stanislaus County, approximately 20 miles southwest of the City of Modesto. The site is 3.5 miles west of Crows Landing, near the intersection of Fink Road and Interstate 5. The 219-acre site is owned and operated by the County. The facility has been active since 1973 and operates under Waste Discharge Requirements (WDR) No. R5-2008-0144, issued by the California Regional Water Quality Control Board, Central Valley Region (RWQCB).

The Fink Road Landfill Facility Consists of Five (5) Waste Management Units:

1. LF-1: A closed 18.3-Acre Class III Municipal Solid Waste Landfill;
2. LF-2: An active 92.3-Acre Class III Municipal Solid Waste Landfill;
3. LF-3: An active 37-Acre Class II Ash Monofill; with six (6) cells\*
4. SI-1: An approximate 1 - Acre Class II Surface Impoundment for storage of liquids from the leachate collection and removal system (LCRS) of LF-3; and
5. SI-2: A 1.4-Acre Class II surface impoundment for storage of leachate from the (LCRS) of LF-2.

\*Note: Ash filling is currently occurring in LF-3, Cell Number 3.

A Waste-to-Energy (WTE) cogeneration facility, operated by Covanta of Stanislaus, Incorporated, occupies a 16.5-acre area at the south west corner of the site. The WTE Facility operates under a different permit, and is therefore not considered a part of the solid waste facility.

The County of Stanislaus (County) is in need of Construction Quality Assurance (CQA) management and construction oversight services pertaining to the construction of a Class II Ash Monofill landfill cell, base liner and LCRS in compliance with the most recent regulatory agency requirements and the attached specifications, construction drawings and CQA plan.

### **B. SCOPE OF SERVICES**

#### **1. Scope Overview**

Consultant shall provide the CQA related services necessary during the Construction Phase of the Class II Ash Monofill LF-3 Cell 4 landfill base liner and LCRS at the Fink Road Landfill.

##### **1.1 Project Requirements and Standards**

- 1.1.1 The Consultant shall include all of the labor, supervision, and materials necessary to perform technical services, professional engineering services, bid support, and related work necessary to successfully provide all CQA related services for the construction of a Class II Ash Monofill LF-3 Cell 4 base liner and the LCRS, in accordance with the CQA Plan prepared by County's Consultant and made a part of this Agreement by this reference.
- 1.1.2 The Consultant shall work closely with the County's Project Manager, the Class II Ash Monofill LF-3 Cell 4 base liner and the LCRS design Consultant (Golder Associates), the awarded Contractor (to be determined), and other affected agencies involved in the Project.
- 1.1.3 All Work shall be in accordance with the requirements of the County; San Joaquin

Valley Unified Air Pollution Control District, California Dept. of Resources, Recycling and Recover (CalRecycle), RWQCB, the Local Enforcement Agency (CalRecycle), the State of California Department of Industrial Relations (DIR), the State of California Public Contract Code for Public Works of Improvement and other applicable federal, state and local agencies.

- 1.1.4 All work products shall be the property of the County.
- 1.1.5 Quality Control: The Consultant shall be solely responsible for the accuracy and completeness of all data contained in memoranda, working papers, and reports. The County's Project Manager will exercise review and approval functions at key points and milestones during the Project and shall review the Consultants' project status reports and conduct meetings with the Consultant.

The Consultant shall implement and maintain quality control procedures during the preparation of any memoranda, working papers, and reports for the Project. The quality control procedures shall be in effect during the entire time work is being performed for the Project. The quality control procedures shall establish a process whereby any calculations are independently checked, and all Project related memoranda, working papers, and reports are routed and received by the affected persons and then bound in appropriate files. All work products submitted to the County for review are required to be marked clearly as fully checked and that the preparation of the material followed the established quality control procedures.

- 1.1.6. All necessary permits have been secured for the project. Golder Associates, Inc. has prepared a CQA Plan that complies with all pertinent regulatory agency requirements. The RWQCB requires that construction for all liner systems and final cover systems shall be carried out in accordance with a CQA plan certified by an appropriately registered professional to satisfy the requirements of section 20324 State Water Resources Control Board (SWRCB) – CQA Requirements (T14: §17774) of the California Regulations: Title 27 Environmental Protection – Division 2, Solid Waste.
- 1.1.7. Consultant shall be aware that Class II waste management units (Class II "Units") shall be constructed to prevent migration of wastes from the Units to adjacent geologic materials, ground water, or surface water, during disposal operations, closure, and the post closure maintenance period. Class II MSW landfills are also subject to any applicable waste containment system design requirements of California Regulations: Title 27, Environmental Protection – Division 2, Solid Waste, SWRCB Resolution No. 93-62 to the extent that such requirements are more stringent than those applicable to a non-MSW Class II landfill under Chapter 3, Criteria for All Waste Management Units, Facilities, and Disposal Sites, Subchapter 2 – Siting and Design, Article 4 SWRCB Waste Management Unit Construction Standards 20310, SWRCB General Construction Criteria (C15 Section 2540).
- 1.1.8. Consultant shall review and obtain familiarity with the current State of California Public Contract Code, the RWQCB, WDR's and County formal bidding and contracting requirements for Construction of Public Works of Improvement, and provide services and work consistent with such Construction Terms and Conditions, so that work under the Construction Phase of the project will be carried out without undue hindrance or delay;

## **2. General Staffing Requirements**

- 2.1. Substitutions of key staff shall be made only with the approval of the County. Consultant

shall notify the County in writing of any key staff changes and include the new staff member's resume which demonstrates why the new staff member is qualified to perform work on this Project.

- 2.2. Project Work Effort: The Consultant shall perform services and provide staff adequate to meet the anticipated workload for the project.
- 2.3. Expertise: The Consultant shall provide through their own staff or by the use of designated sub-consultants, expertise in all areas defined within this Scope of Work, including specialty areas such as in the Class II Ash Monofill LF-3 Cell 4 base liner and LCRS construction. The Consultant shall utilize sub-consultants identified in this Scope of Work with the expertise in all areas as defined in the Scope of Work. On occasion, the Consultant may need to hire specialty sub-consultants not previously identified in this Agreement. In either case, County reserves the right to approve the use of sub-consultant firms proposed for specialty work. Consultant shall notify the County in writing of any sub-consultants working on the Project that were not previously identified in their proposal and include the sub-consultant's resume which demonstrates why the sub-consultant is qualified to perform work on this project.
  - a. The Consultant may provide staff with varying levels of expertise; however, work performed by subordinate staff members shall only be done under the direction of the designated responsible engineers, specified in the contract with the expertise in the required technical areas.
- 2.4. CQA Officer General Duties
  - 2.4.1. Consultant shall provide a CQA Officer as a professional representative of the Consultant. The CQA Officer shall be responsible for planning, coordination, and implementing the CQA Plan, as fully described in the CQA Plan.
  - 2.4.2. Consultant shall designate an engineer experienced in CQA activities as it relates to construction of a Class II LF-3 Cell 4 landfill cell, to provide the CQA Officer services. The CQA Officer shall be a registered civil engineer in the State of California, or a certified engineering geologist, as required by the California Code of Regulations Section 20324(b)(2) of Title 27.
  - 2.4.3. The responsibilities of the Consultant's CQA Officer/Project Manager shall include, but not be limited to: attending meetings, review of submittals, notifying CQA technicians of approved materials, reviewing field data, preparing the Final CQA Report, and being Consultant's primary contact with the County.
  - 2.4.4. In addition, as part of the CQA Officer's responsibilities, a test-result template will be developed for this project, which shall include specified requirements, test results, and whether the test passed or failed. This template shall be updated continuously as testing progresses and shall be reviewed by the CQA Officer weekly to ensure that the testing requirements and frequencies are being met. Consultant's CQA Officer shall sign off on the test result template as testing is completed.
  - 2.4.5. CQA Officer shall ensure that construction is performed in general conformance with the Construction Plans, Specifications and drawings, which are made a part of this Agreement by this reference. CQA Officer shall, in cooperation with the Design Engineer, approve all design changes and clarifications to design questions. Ultimately, the Consultant shall be responsible for completing all Project tasks in a timely fashion and to diligently follow the anticipated schedule set forth for this Project.

2.5. CQA Monitor General Duties

2.5.1. Daily communications between the County shall occur through the Consultant's Lead CQA Monitor. Each new project phase or sub-phase shall begin with a pre-task meeting. All meetings shall be conducted with an agenda approved by the County. Management tools shall include:

- a. Schedule of regulatory compliance requirements.
- b. Weekly updates with County management staff.
- c. Team updates including written progress reports.
- d. Accounting reports for tracking project budget.

2.5.2. Daily Compilation of Field Notes/Computer Database: Consultant's Lead CQA Monitor shall prepare a daily record of the CQA activities at the site. These daily reports shall be used by the Lead CQA Monitor to prepare reports that shall be submitted to the CQA Officer and the County. Along with the daily reports, inspection data sheets shall be filled out for any inspection activity or test procedure. In order to visually document the work progress and any problems that may occur, a photographic log shall be kept on all activities. All daily reports, testing, and documentation shall be logged into a master filing log form and filed accordingly. The files shall be posted to Consultant's FTP site and be available for County to review at all times.

2.5.3. The CQA Monitor shall document the activities of the Contractor in sufficient detail and with continuity to provide a high level of confidence that the work product follows the intent of the construction documents. CQA Monitor shall perform tests, when appropriate, to provide a high level of confidence that the characteristics of the materials and services meet the requirements of the construction documents.

2.6. Consultant shall utilize the services of TRI Environmental (TRI) to perform the third party geosynthetic conformance testing. The conformance samples shall be obtained directly at the manufacturing plant by TRI to reduce the potential for delays or extra costs due to conformance test failures. Depending on the circumstances, it may be feasible to have the manufacturers deliver samples to the testing laboratory directly.

2.7. Consultant agrees that so long as the CQA Officer is an active employee of the Consultant, the CQA Officer shall be CQA Officer for all work agreed to under this Agreement. If the CQA Officer is removed by the Consultant while still an active employee of the Consultant without County's approval, the County shall assess as damages a penalty of \$10,000. The penalty assessed by County may be deducted from current billing due to the Consultant.

2.8. However, notwithstanding the foregoing, the CQA Officer is an at-will employee of the Consultant, and nothing in this paragraph shall cause or require the Consultant to be penalized in the event of termination of said at-will employment relationship. Consultant will be allowed to substitute the CQA Officer without penalty, subject to County's written approval and with the understanding that there will be a training period provided at no additional expense to County, upon a 30-day written notice to County. County reserves the right to interview any replacement for the CQA Officer and to approve or reject that individual.

2.9. Any individual above the Project Principal or not in the actual and direct performance of engineering work shall be considered in the overhead markup and shall not invoice their time against County projects.

2.10. County reserves the right to have the Consultant remove and replace the CQA Officer,



CQA Monitor(s) or any consultant or sub-consultant staff from the project for cause.

**3. Pre-Construction/Bid Support**

- 3.1. The Consultant shall provide pre-construction support to the County staff during the project, including bidding and procurement process. The County shall prepare the formal bid solicitation documents for the construction of the landfill base liner and LCRS.
- 3.2. The Consultant shall attend the pre-bid conference, with the County's Project Manager, design consultant, and any contractors who are preparing to bid on the Project. Consultant shall review all applicable construction documents prior to the pre-bid conference to become familiar with the project.
- 3.3. Consultant shall be available to assist the County in responding to Requests for Information (RFI'S) specifically regarding Construction and CQA related services during the advertisement phase. Consultant shall be available to provide the County with written technical responses to the bidder's specific CQA related questions. The Consultant shall expedite the preparation of immediate responses to questions. The County shall include the Consultant responses to bidder questions in the addenda that shall be distributed by the County to the bidders.
- 3.4. The Consultant shall not be in direct communication with bidders. The basis of bid for the construction contractors will be adjusted as needed by the County only.

**4. CQA Planning, Coordinating, and Administrative Services**

- 4.1. Project Schedule: At the beginning of the Project, the Consultant's CQA Officer and CQA Monitor shall review the project schedule and have a clear understanding of the proceeding of various work tasks and the estimated time required for completion of each task, including construction dates, development activities and construction meetings. The estimated days of construction are 54 working days. Consultant shall make recommendations to the Project Manager regarding construction timeline, as appropriate.
- 4.2. A working day is any 24-consecutive-hour period except:
  - 4.2.1. Saturday, Sunday and a legal Holiday.
  - 4.2.2. Day during which you cannot perform work on the controlling activity for at least 50 percent of the scheduled work shift with at least 50 percent of the scheduled labor and equipment due to any of the following: adverse weather-related conditions, traffic maintenance under the Contract, Suspension of a controlling activity that you and the Project Manager agree benefits both parties, unanticipated event not caused by either party such as Act of God, Act of public enemy, fire, flood, declared state of emergency, etc., or an issue involving a third party such as industry or area-wide labor strike, material shortage, freight embargo, or jurisdictional requirement of a law enforcement agency.
- 4.3. Excusable delays are delays caused by the Department and not reasonably foreseeable when the work began, such as change in the work, Department action that is not part of the Contract, presence of an underground utility main in a location substantially different than specified, department's failure to review a submittal or provide notification in the time specified.
- 4.4. Critical delays are excusable delays that extend the scheduled completion date.
- 4.5. The Consultant shall provide verbal or written updates of the Project Schedule to the

Project Manager, upon request, throughout the course of the Project.

- 4.6. Consultant shall closely follow the Contractor's schedule and shall review the progress schedule, as necessary, in order to identify any potential scheduling problems. Consultant shall relay any concerns to the Project Manager so that they may take steps to maintain the Project Schedule if a delay is anticipated or occurs. The Consultant shall notify the County Project Manager immediately of any problems having an impact on either the project schedule or budget or with the construction of the landfill base liner and leachate collection system.
- 4.7. Cooperative Effort/Project Coordination:
  - 4.7.1. The Consultant's CQA Officer and/or CQA Monitor(s) may be required to attend meetings to discuss the current status of the overall contract with the Project Manager. Conference calls may be utilized whenever possible in place of a physical meeting. Meetings shall be in accordance with Section 5.4 of this Scope of Work and in accordance with the CQA Plan.
  - 4.7.2. The CQA Officer shall cooperate with the Project Manager, Design Engineer, any County, local and State agencies, and public and franchise utility companies, as necessary.
  - 4.7.3. Consultant shall have a clear understanding of the delineation of the CQA management organization, including the chain of command of the CQA Officer, CQA Monitor(s) and contractors, as described in the CQA Plan.
- 4.8. Change Orders: The County's designated Project Manager will be responsible for preparing and handling of Change Orders. Consultant shall review any change orders related to construction issues based on drawings, specifications and other design information from Engineer firm, should the Project Manager request the Consultant's professional opinion/expertise on any of the information therein. Prior to work starting, Project Manager, County, and Consultant shall discuss the work plan to be used on Change Orders.
- 4.9. Claims Management: The County's designated Project Manager will be responsible for all duties related to claims management. Consultant shall review additional compensation claims that are submitted during the construction period, should the Project Manager request the Consultant's professional opinion/expertise on any of the information therein. Prior to work starting, Project Manager, County, and Consultant shall discuss the work plan to be used on Claims.

## **5. Construction Quality Assurance Services**

### **5.1. Overview of CQA Services**

- 5.1.1. Consultant shall provide all onsite CQA services including observation, oversight, inspection, any necessary testing, and documentation of construction activities as outlined in the CQA Plan. Consultant shall verify construction installation is in accordance with the design and specifications.
- 5.1.2. Performance Standard: In accordance with the CQA Plan, including all relevant aspects of Construction Quality Control (CQC), Consultant shall ensure that materials and procedures utilized in the placement of any containment feature at a Class II waste management unit (Unit) shall be tested and monitored to assure the structure is constructed in accordance with the design specifications approved by the RWQCB.

- 5.1.3. Material submittals may be used by the CQA Monitor to establish the acceptability of materials. CQA Officer shall be responsible for the review and approval of any material submittals, as outlined in the CQA Plan.
- 5.1.4. In accordance with the CQA Plan, Consultant shall ensure that for each specified phase of construction, the requirements are met, including but not limited to a CQA Officer and CQA Monitor(s) with the level of experience and training needed for every major phase of construction in order to ensure that the installation methods and procedures required in the containment system design will be properly implemented. CQA shall be performed by senior members of the Consultant's team with experience in the activities typically associated with this type of construction project.
- 5.1.5. Understanding of the CQA testing protocols of preconstruction, construction, and post-construction which shall include at a minimum:
  - a. The frequency of inspections by the operator;
  - b. The sampling and field testing procedures and equipment to be utilized, and the calibration of field testing equipment;
  - c. The ability to execute performance audits at the frequency as determined by the design professional and the ability to examine the results; and
  - d. The size, method, location and frequency of sampling, sampling procedures for laboratory testing, the soils or geotechnical laboratory to be used, the laboratory procedures to be utilized, the calibration of laboratory equipment and quality assurance and quality control of laboratory procedures.
- 5.1.6. Construction Oversight
  - a. Consultant shall provide technical advice and consulting to the County in matters arising out of or during the performance of the construction, as outlined and described in the CQA Plan.
  - b. Consultant shall oversee, observe, test and monitor all construction work to ensure activities are performed in accordance with the CQA Plan, plans and specifications and shall document the construction progress and shall be on on-site each working day during the construction period. Based on field observations from the Consultant, Consultant shall direct the County's contractor to perform the work and adjust the work as needed.
  - c. Consultant shall be the County's on-site representative and shall be responsible for administration of the CQA work being conducted at the site. Consultant shall maintain communications with the designated County project manager and inform the County as to the status of all aspects of work. The Consultant and the County project manager shall discuss and agree upon the lines of authority and other administrative issues. The Consultant shall not deviate from those procedures unless directed otherwise.
  - d. Consultant shall provide staff that are cross-trained in a variety of disciplines which provides for efficient construction oversight when multiple activities are being undertaken by the County's hired contractor. As the contractor's activities increase, decrease, or the critical nature of the work intensifies, the Consultant's staff shall be adjusted accordingly to provide for an appropriate level of monitoring. One CQA Monitor shall be required on-site at all times to provide CQA services, with senior level and staff level support provided only on an as-needed basis.

- e. Consultant shall provide observation/inspection of all construction work on the project. Consultant's CQA Monitor shall make reasonable efforts to guard the County against defects and deficiencies in the work of the contractor and to ensure provisions of the contract documents are being fulfilled.
- f. Consultant shall provide full project inspection, mechanical, electrical and civil inspection, labor compliance/DIR management and oversight, quality assurance oversight of material testing and construction staking.
- g. During the progress of the work, the CQA Officer and design engineer shall obtain as-built information provided by the contractor, CQA Monitor, or others. CQA Monitor shall confirm on a monthly basis that the Contractor is maintaining up-to-date marked up prints of construction drawings and documents showing all field changes and as-built conditions. Final as-built drawings shall be included with the Construction Certificate Report.
- h. Consultant shall oversee and instruct the contractor on the proper handling and methods of any necessary sampling identified in the construction specifications, and Consultant shall log all pertinent information. Consultant shall be responsible for any necessary lab analysis, in accordance with the construction specifications and CQA Plan.

5.1.7. Consultant shall ensure the construction contractor provides Dust Control in accordance with the construction specifications.

5.1.8. Consultant shall ensure the contractor provides a Traffic Control Plan in accordance with the construction specifications, identifying detour routes, flagger(s), and signage for various stages of construction. Landfill operations and traffic are to be maintained during construction and shall be considered to have right of way under all circumstances unless flagger(s) are provided.

5.1.9. CQA Monitor shall notify the County Project Manager, Contractor, and CQA Officer as soon as possible of any discovered or observed nonconformance during the construction process, including products, job-related materials, documentation, or elsewhere. Nonconformance issues shall be handled as described in the CQA Plan.

## 5.2. **Work Plan**

The primary purpose of this project is for Consultant provide CQA observation, testing, and documentation for the construction of the Class II LF-3 Cell 4 base liner and LCRS at the Fink Road Landfill in accordance with the approved technical Specifications, Construction Plans and CQA Plan so that the County can gain regulatory approval for the new cell.

The construction of the cell includes earthworks and geosynthetics. The proposed liner system includes the following elements:

### Base Liner System (from bottom to top)

- Excavation
- 12-inch Subgrade preparation layer
- Secondary geosynthetic clay liner (GCL)
- Secondary 60-mil HDPE geomembrane
- Geocomposite

- Primary geosynthetic clay liner (GCL)
- Primary 60-mil HDPE geomembrane
- 6-inch drainage gravel layer
- 8 oz geotextile
- 15-inch operations layer

Sideslope Liner System (from bottom to top)

- Excavation/subgrade
- Geosynthetic clay liner (GCL)
- 60-mil HDPE geomembrane
- 24-inch operations layer

CQA observation, testing, and documentation shall be performed by Consultant during excavation, subgrade preparation and installation of the geosynthetics (GCL, geocomposite, geotextile and geomembrane), placement of the granular drainage material, and placement of the protective/operations layer.

**5.3. Preparation of a CQA Implementation Plan (Task 1)**

Consultant shall prepare a CQA Implementation Plan, of which key components shall include:

- 5.3.1. Project Organization: The CQA Implementation shall include a description of the overall project organization and a detailed organizational structure of the CQA function. This shall include identification of CQA personnel, their roles, identification of the materials testing laboratories, and their qualifications.
- 5.3.2. Project Control of Forms: Daily report forms, test report forms, and other project forms shall be controlled by the CQA Monitor, who shall maintain a master of each form. Upon issuance of a new form, the CQA Monitor must recall and remove all superseded copies along with the master.
- 5.3.3. Submittal Control Log: This log shall list all submittals required by the technical specifications and shall be established by the Consultant for the purpose of organizing submittal requirements and providing a single-point reference for submittal status. Consultant shall maintain the submittal control log in coordination with the County and contractors during construction. The submittal control log shall document: 1) submittal numbers, 2) referenced specification sections, 3) submittal descriptions, 4) received dates, 5) reviewer, 6) action taken determinations, and 7) return dates.
- 5.3.4. Geosynthetic Materials Manufacturing and Submittal Control Log: This log shall list all submittals required by the Technical Specifications regarding geosynthetics and shall be established by the Consultant for the purpose of organizing submittal requirements and providing a single-point reference for submittal status. Consultant shall maintain the submittal control log in coordination with the County and contractors during construction.
- 5.3.5. Schedule of Testing Frequencies: A table shall also be established by the Consultant during review of the project documents, and be included with the Implementation Plan. This table shall document the total number of CQA tests to be performed during construction and shall list material types, required testing, and testing frequencies established by the technical specifications or CQA manual. Estimated quantities from the bid form or material take-off measurements from the

drawings shall then be used by the Consultant to determine the actual number of tests to be performed for each material type or unit of construction. The table shall also aid Consultant in determining what testing shall be performed on-site and what testing shall be performed off-site. The table shall be updated with the actual number of tests performed as the project progresses. A separate, but similar, table shall be prepared and maintained by the Consultant for MQC testing of geosynthetics.

- 5.3.6. Geosynthetic Materials Manufacturing, Delivery, and Conformance Log: Consultant shall keep this log to track all geosynthetic materials manufactured for the project and shall list all conformance tests required by the technical specifications. The log shall be used by Consultant for tracking conformance sampling and testing requirements and providing a single-point reference for conformance status. Consultant shall track all material lot and roll numbers of materials manufactured for this project. Tracking shall begin as soon as the materials are manufactured and slated at the plant sites. Based on the distribution of material lots and roll numbers, Consultant shall work with their subcontracted geosynthetics materials testing laboratory to take the appropriate samples. The log shall be continuously updated by Consultant regarding the sampling and testing status (i.e. date samples taken, test results pending, pass, or fail). To the extent possible, Consultant shall attempt to coordinate conformance sampling at the plant sites before the materials are even shipped.

The geosynthetic materials control log prepared by Consultant shall document: 1) roll numbers of materials manufactured for the project, 2) lot numbers associated with each roll, 3) roll numbers actually delivered to the site, 4) square footage of material associated with each roll, 5) status of MQC test data submittal and review, 6) disposition of rolls on site (e.g. installed, or where stored), 7) identification of roll numbers sampled for conformance testing and date sampled, 8) list of conformance tests assigned to each sample, 9) conformance test status (e.g. pending, pass, or fail), and 10) disposition of non-conforming results.

- 5.3.7. Master Soils Testing Log: Consultant shall keep this log to track all soil materials sampled and tested for the project. The soils testing log shall document: 1) sample numbers (continuous and in order), 2) date sampled, 3) description of material sampled, 4) tests assigned, 5) test status, 6) test result, and 7) disposition of non-conforming results.
- 5.3.8. Soils Compaction Testing Log: Consultant shall keep this log to track all soil materials tested for compaction on the project, whether by nuclear density gage or other method. The soils compaction log shall document: 1) test numbers (associated with lifts), 2) date tested, 3) description of material tested, 4) test location (reference grid and elevation), 5) test results in terms of moisture and dry density, 6) compaction reference (e.g. Proctor curve), 7) compaction specification requirement, 8) pass or fail designation, and 9) disposition of non-conforming results.
- 5.3.9. Destructive Seam Testing Log: Consultant shall keep this log to track all destructive tests performed on geomembrane seams. The destructive seam log shall document: 1) test numbers (associated with seams), 2) date tested, 3) peel and shear test results, 4) pass or fail designation, and 5) disposition of non-conforming results.
- 5.3.10. Processing Test Reports: CQA Monitor shall complete a test report whenever testing is performed. The Test Reports shall be peer reviewed and include a check for mathematical accuracy, conformance to test requirements, conformance to

Specifications and a check for clarity and completeness. Copies of all test reports shall be transmitted weekly to the CQA Officer, and the original maintained by the CQA Monitor.

- 5.3.11. Daily Construction Reports: Consultant shall prepare project documentation so as to successfully resolve conflicts and mitigate potential contractor claims. CQA Monitor shall write a daily record of work progress, as described in the CQA Manual. The following documentation shall be maintained during the project:
- a. All daily reports shall be finalized by the following day. The report shall include the date, weather, a summary of the equipment working (and non-operating equipment), manpower, material deliveries, visitors to the site, and a narrative. Daily Reports shall be submitted to the County on a weekly basis on Monday of the following week and will cover work through the previous Friday.
  - b. The narrative portion of the report shall include sufficient information to convey to the County the scope of work that occurred on that day and the locations in which the work occurred, including all monitoring activities and details for each test performed. Consultant shall document any changes or unforeseen conditions, deficiencies, and when corrective action is required. CQA Monitor shall be responsible for the timely preparation and processing of all required documentation and reports.
  - c. Written text-based products, such as reports, shall be in PDF format with header and footer as directed by the County to coordinate with other documents.
  - d. The daily reports shall be reviewed by the CQA Officer, who shall be responsible for maintaining a complete file of daily reports.

#### 5.4. Meetings (Task 1)

Consultant shall maintain close coordination between all parties involved in the project. To facilitate this task, Consultant shall schedule meetings during the course of the project. The CQA Project Engineer/CQA Officer, Lead CQA Monitor, and other personnel as deemed necessary shall attend the individual task meetings outlined below to review the overall project management, chain of command, and construction progress and issues.

- 5.4.1. Pre-Bid Meeting: Consultant shall attend the construction pre-bid meeting in order to support the County and answer any questions from the potential contractors regarding CQA activities. At a minimum, this meeting shall be attended by the CQA Officer and/or Lead CQA Monitor.
- 5.4.2. Pre-Construction Meeting: A preconstruction meeting shall be held by the Consultant prior to project start up. The parties that shall attend this meeting are the County, Contractor, Designer and CQA Consultant. The purpose of this meeting shall be to:
- a. Review the project Construction Documents, Construction Drawings, and Specifications;
  - b. Review project tasks and responsibilities;
  - c. Review the project schedule;
  - d. Define lines of communication and authority;
  - e. Establish reporting and documenting procedures;
  - f. Review testing equipment and test methods;

- g. Establish protocol for submittal of CQA conformance testing data sheets; and
- h. Conduct a site inspection to review work areas, lay-down areas, stockpile areas, access roads, and related project issues.

Consultant shall document the preconstruction meeting and copies shall be provided to all persons present at the meeting.

**5.4.3. Daily Meetings:**

An informal meeting shall be held by the Consultant before the start of each construction shift. Consultant's CQA Monitor and the Contractor shall attend the daily progress meetings. The purpose of these meetings shall be to:

- a. Review the proposed activities scheduled by the Contractor for the day;
- b. Discuss any problems or deficiencies that have arisen during construction;
- c. Review the results of any test data;
- d. Discuss the Contractor's deployment of personnel and equipment; and
- e. Review the previous day's activities including the effectiveness of procedures taken to alleviate any deficiencies.

All progress meetings shall be documented by the CQA Monitor on his daily field construction inspection report, and any problems or deficiencies noted shall be immediately brought to the County's attention by the Consultant.

**5.4.4. Weekly Progress Meetings:**

A progress meeting shall be held by the Consultant at the beginning or end of each week to review the previous week's activities or progress, discuss present and future work, and discuss any current or potential construction problems. The County, CQA Officer (if necessary), CQA Monitor, and the Contractor shall attend. All weekly progress meetings shall be documented by the CQA Monitor who shall transmit minutes to the County and all other parties.

**5.4.5. Performance Audits/Work Deficiency Meetings:**

A performance audit shall be conducted at least every two weeks by Consultant's CQA Officer. The audit can be made during one of the weekly meetings to be performed by the CQA Officer and CQA Monitor in the presence of the Contractor or his representative. Specific problems or deficiencies identified during the audit or during the course of daily observations by the CQA Monitor shall be discussed at the work deficiency meetings and resolved as soon as possible. The CQA Monitor, CQA Officer, the County, and the Contractor shall attend the work deficiency meetings. The purpose of these meetings shall be to:

- a. Identify the nature and extent of the problem;
- b. Discuss the means necessary to correct the deficiency or problem; and
- c. Provide a solution to the problem and determine how the corrective action shall be implemented.

This meeting shall be documented by the CQA Monitor on a construction problem and solution data sheet form and copies distributed to the County and all other parties.

**5.5. CQA on Earthwork Components (Task 2)**

During the earthwork components of construction, Consultant shall conform to the criteria



of the CQA Plan, project Plans and Specifications, as well as the appropriate sections of the American Society for Testing and Materials (ASTM) Standard Test Methods, EPA test procedures, where applicable and Title 27.

During the earthworks, Consultant shall provide a Lead CQA Monitor and additional Monitors on-site as necessary to perform the CQA services and pace the rate of construction. Consultant's staff shall be available to meet the project needs as the construction schedule requires. Consultant shall provide as much of the required testing on-site as possible to provide for fast turn-around time of results and better feed back to the construction personnel.

Consultant shall utilize a field office/laboratory provided by the Contractor. The field laboratory shall be equipped to enable the CQA Monitors to perform conformance tests on the soil materials, for particle size (D-422), soil classification (D2488), moisture-density relationships (D-1557), and moisture content (D-2216), as applicable. In addition, the trailer shall be used to store Consultant's nuclear density gauge that shall be used for conformance testing of the required in-place densities (D-2922) and moistures (D-3017) for the earthwork fill.

Consultant shall run all required soils test in the field trailer with the exception of the permeability testing for the soil preparation layer and granular drainage materials. This testing shall be conducted in the Consultant's Grass Valley soils laboratory. By providing most of the testing on site, Consultant shall provide rapid turn-around test results, eliminating construction delays associated with laboratory analyses. The CQA tests are part of the daily observation and testing, therefore the costs shall be incorporated into the daily engineering technician rate.

The primary earthwork components for the project shall include the following:

- a. Excavation
- b. Subgrade preparation layer
- c. Granular drainage layer and Sump Gravel
- d. Trenching and backfilling of trenches
- e. Operations soil layer

CQA Services for each of the above listed items are described in detail in the following sections:

5.5.1. Excavation and Select Soil Stockpiling:

Consultant shall provide a CQA Monitor during the excavation to aid the Contractor in the proper selective stockpiling of the material.

The material(s) that shall be excavated for the construction of LF-3 Cell 4 consists of clay, rock, sand, gravel, and dirt. These material(s) shall be excavated as per instructions set forth by County Landfill representatives and whereby black clay for the liner systems, and gravel for the side-slopes, shall be separated according to type, for the purpose of testing, and if found to be acceptable by Consultant, shall be used during the construction of LF-3 Cell 4.

The methodology used to perform the excavation of black clay and gravel material(s) shall be to test applicable materials for suitability during construction, and if found to be acceptable to the Consultant, excavate primarily flat (horizontal) thereby avoiding the mixing of different strata's associated with down-slope cutting. Care shall be exercised by the construction contractor to ensure the integrity of the excavated material(s).

The County believes there is sufficient material onsite to construct the bottom clay liner and side slopes based on past experience, provided the materials are properly excavated and segregated by the construction contractor. The construction contractor shall obtain soil borings onsite to make the final determination that the various soil types are, in fact, present and in sufficient quantities to construct the bottom clay liner and side slopes.

Earthfill soils shall not include cohesionless fine sands.

During excavation, Consultant's CQA Monitor shall perform, at a minimum, the following items as shown in the CQA Plan:

- a. Observe stripping is complete and all stripped materials are placed in the designated stockpile.
- b. Observe that construction surveying and staking is performed.
- c. Visually monitor excavation to identify soil types.
- d. Perform field and laboratory testing as indicated in the CQA Plan.
- e. Notify Contractor of soil classification and recommend proper stockpile placement.

5.5.2. Subgrade Preparation Layer:

Consultant shall provide a CQA Monitor during the scarification, placement and compaction of the subgrade. During preparation of the subgrade layer, CQA Monitor shall perform, at a minimum, the following items as shown in the CQA Plan:

- a. Observe removal of oversized materials.
- b. Observe that material is suitable for subgrade layer soil.
- c. Observe lift thickness.
- d. Perform field and laboratory testing as indicated in the CQA Plan.
- e. Observe that final as-surveyed grades meet the required slope and elevation tolerance.

In addition to the soil subgrade field and laboratory testing, CQA Monitor shall observe that the subgrade has been rolled with a steel drum roller and that there are no protrusions and/or sharp objects that could damage the overlying geosynthetic materials. Prior to geosynthetic material deployment, CQA Monitor shall observe that the subgrade is suitable for geosynthetic installation.

5.5.3. Trenching and Backfilling of Trenches:

During the trenching and backfilling of trenches, Consultant shall provide a CQA Monitor to perform, at a minimum, the following items as shown in the CQA Plan:

- a. Observe proper trench depths and dimensions achieved.
- b. Perform field and laboratory testing of the backfill materials per the CQA Plan.
- c. Observe placement of piping and observe that piping is not damaged during granular material placement.

5.5.4. Granular Drainage Layer and Sump Gravel:

During the placement of the granular drainage layer and sump gravel, Consultant shall provide a CQA Monitor to perform, at a minimum, the following items as shown in the CQA Plan:

- a. Observe that the material is suitable for drainage and sump layer.
- b. Review material submittals.
- c. Observe that the construction method will not adversely affect the underlying geosynthetics and that any damaged areas are properly marked and repaired.
- d. Observe that all underlying geosynthetics have been approved prior to granular material placement layer placement.
- e. Observe lift thickness control and final thickness has been achieved.
- f. Perform field and laboratory testing of the granular drainage layer and sump gravel materials per the CQA Plan, including gradation and permeability testing.
- g. Observe placement of piping and verify that piping is not damaged during granular material placement.

5.5.5. Operations Soil Layer:

During the placement of the operations soil layer, Consultant shall provide a CQA Monitor to perform, at a minimum, the following items as shown in the CQA Plan:

- a. Observe that the construction method will not adversely affect the underlying geosynthetics and that any damaged areas are properly marked and repaired.
- b. Observe that all underlying geosynthetics have been approved prior to operations soil layer placement.
- c. Observe lift thickness control and final thickness has been achieved by survey and direct field measurements.
- d. Observe that final grades meet the required slope and elevation tolerance.

- 5.5.6. The work includes excavation near refuse, and work on the landfill surface. Consultant shall ensure that the construction contractor is aware that this work is in the landfill and that potential hazards exist due to the presence of these buried materials, including those associated with landfill and the refuse itself, fire, and health related hazards.

**5.6. CQA on Geosynthetics Components (Task 2)**

CQA services during the geomembrane liner installation and placement shall conform to the criteria set forth in the CQA Plan, Specifications, as well as the appropriate ASTM sampling, inspection and testing procedures.

All CQA Monitors used by the Consultant shall have significant experience with CWA on projects involving synthetic liner systems. CQA Monitors shall have experience on geomembrane installation, wedge and fusion welding techniques, and the associated quality control procedures.

Consultant's field laboratory shall be equipped with a personal computer, a portable tensiometer, and a coupon press. The tensiometer shall have a digital readout with a peak hold. All of the Consultant's field tensiometers shall be tested with a set of calibration coupons that are used to verify the accuracy of the field tensiometer. By utilizing on-site testing, the Consultant can ensure quick results for the liner seam strength testing as well as provide a significant cost savings to the County.

Prior to installation in the field, conformance testing shall be conducted by a third party laboratory. Consultant shall utilize TRI for this task. Consultant's CQA Monitor shall ensure that the appropriate samples have been collected and shall review all final conformance results prior to installation. For all geosynthetics, the specified unloading and storage procedures shall be observed.

5.6.1. Geosynthetic Clay Liner (GCL) Installation:

Conformance sampling of the GCL shall be performed at the manufacturing plant. The GCL materials shall be tested in accordance with the CQA Plan. All GCL conformance tests shall be performed by Consultant's subcontractor TRI. All testing shall be performed in accordance with the project Specifications and appropriate test method.

Consultant's Lead CQA Monitor shall verify subgrade acceptability prior to the placement of the GCL. This verification shall include assurance that the surface has been smooth rolled and is free of irregularities, soft spots, excess moisture, voids, cracks, and construction stakes or hubs. In addition, Consultant shall verify in writing that the subgrade is acceptable to the installer for placement of liner materials.

During placement, Consultant's CQA Monitor shall observe that the subgrade has not been damaged or deteriorated since previous acceptance. Consultant's observations shall include checking for entrapped particles, needles, punctures, tearing, thinning, premature hydration, and other evidence that the GCL material may not meet the specified requirements. Overlapping of each panel shall be continuously monitored and observed by the CQA Monitor. The GCL panels shall each have an identification number placed on them by the Contractor. The CQA Monitor shall establish a chart demonstrating correspondence of panel placement, roll numbers, certification reports, and panel numbers. Continuous visual observation in accordance with the Specifications shall be maintained throughout the placement and installation of the GCL. Consultant shall observe that the panels are placed properly and are covered the same day.

As the GCL panels are deployed, Consultant shall check for proper overlap and that the manufacturer's requirements for applying granular bentonite along the seams is followed. Consultant shall also observe the placement of ground wires as needed for the Leak Location surveys. All punctured, torn, or defective GCL shall be removed or patched by the County's Contractor, with the Consultant overseeing the work. All patches shall be overlapped at least 12 inches and secured according to the Specifications. If required, the CQA Monitor shall verify that the moisture content of the GCL does not exceed the prescribed maximum allowable value on the day it is covered with geomembrane.

5.6.2. Geomembrane Installation:

Conformance sampling of the geomembrane liner shall be performed at the manufacturing plant by TRI. The liner materials shall be tested as provided in the CQA Plan. All geomembrane conformance tests shall be performed by the Consultant's subcontractor, TRI. All testing shall be performed in accordance with the project Specifications and appropriate test method.

Following inspection and acceptance of the GCL, receipt of the manufacturer's quality control certificates, and passing conformance tests from the Consultant's subcontractor, TRI, the Contractor may begin deployment of the geomembrane liner. Consultant's CQA Monitor shall observe that the liner is deployed according to the Specifications and that the material is not damaged during placement. The CQA Monitor shall observe the testing of the seaming equipment and the trial welds. No seaming can take place until each welder has passed the trial weld and is approved to begin work. Consultant shall ensure that all seaming is in accordance with the Specifications and the CQA Plan and that no seaming takes

place above or below the given temperature requirements. In general, the nondestructive testing of seams shall be visually observed by the CQA Monitor and all of the results shall be recorded on the liner and on the proper documentation form.

For destructive tests, the CQA Monitor shall direct the Contractor to take samples every 500 feet in locations determined by the CQA Monitor. Additional samples may be necessary if the seam looks suspect, weather conditions change, there is wrinkling in the area, or there are a high number of failures in the shear and peel tests. If additional samples are required, the CQA Monitor shall direct the Contractor to take those additional samples as needed.

Destructive testing (shear and peel tests for field seams) shall be performed on-site by the CQA Monitor using a calibrated field tensiometer. This testing shall be performed during the normal course of work by Consultant's field staff; therefore, only the equipment cost for the tensiometer shall be incurred by the County.

Upon completion of the geomembrane installation, CQA Monitor shall complete a final inspection of the liner. The purpose of the inspection is to identify areas that are damaged or have unacceptable wrinkles or folded material. CQA Monitor will inform the Contractor of the necessary repairs and observe that the repairs are made. Once the secondary geomembrane has been accepted, leak detection geocomposite installation may begin.

5.6.3. Geocomposite and Geotextile Installation:

The inspection activities for the geocomposite and geotextile shall be divided into categories consisting of delivery, conformance testing, installation, field testing and repairs, and final inspection. Conformance testing of the geocomposite and geotextile shall be performed by the Consultant's CQA staff upon delivery to the site (or at the manufacturing plant). The material shall be tested in accordance with the project CQA Plan and Specifications. All conformance tests shall be performed by Consultant's subcontractor, TRI, in accordance with the project Specifications and appropriate test method.

Prior to geocomposite or geotextile placement, CQA Monitor shall verify grades and make sure the surface of the underlying materials has been prepared and accepted for geocomposite placement. During installation of the geocomposite and geotextile, CQA Monitors shall inspect the tying and sewing (seaming) process for the geocomposite and geotextile panels.

5.6.4. Geoelectric Leak Location:

Upon completion of the primary geomembrane installation a water puddle survey shall be conducted on the cell bottom (ASTM D7002). The geoelectric leak detection testing shall be conducted by Consultant. Not using a subcontractor to perform the leak location testing shall ensure proper scheduling is met and no delays in the project will occur. Details on the water puddle leak location testing are described below:

5.6.4.1. Water Puddle Method:

The water puddle method shall be used by Consultant for exposed geomembrane. Water shall be sprayed onto the liner as an electrically conductive medium and pushed into contact with potential holes by a conductive roller bar on the end of a water lance. A voltage supply shall

be grounded to the earth and connected to the water lance. In the presence of a hole, current is allowed to flow from the water lance, through the hole to the ground or ground wire beneath the liner being surveyed. An ammeter in series with the water lance converts the increase in current to an audible signal, which shall alert the Consultant of the presence of a leak. A calibration shall be performed before the beginning of the survey. A one (1) mm hole shall be drilled into the geomembrane to ensure that the survey equipment is capable of locating it. This calibration location shall be clearly marked by Consultant for repair.

Wrinkles in the liner can interfere with the intimate contact between the liner and the earth beneath it. Effort shall be made by the Consultant to push the wrinkles down, but when the wrinkles are severe, the work shall be performed in the early morning and late afternoon/evening when the wrinkles are minimized. In some cases the work may take place over night. This survey shall not be performed during rainfall, when the geomembrane is completely wet, or when temperatures drop below freezing.

5.6.4.2. Safety:

The water puddle method requires that a DC voltage be applied to the water covering the primary geomembrane. The level of voltage applied does not introduce a health hazard to personnel working on or around the survey area. Water sprayed on the geomembrane creates a slipping hazard and hoses used to convey the water create a tripping hazard. Therefore, only necessary, trained personnel shall be allowed on the liner during leak testing to assure safety of others not familiar with the testing.

5.6.4.3. Site Preparations and Support:

The Contractor shall be responsible for preparing the site for the water puddle survey and providing additional support as described below. Consultant shall discuss all aspects of proper site preparation with the Contractor prior to work being done, and Consultant shall oversee and ensure that the following is being done properly and according to the Construction Specifications:

- a. The Contractor must provide a source of electrically isolated water, i.e., a water source that is electrically isolated from the ground outside the survey area. A water truck and driver, towable water "buffalo" or trailer and pump are acceptable methods. Water pumps shall be capable of pressurizing the water up to 30 psi. Someone capable of operating the water source must be present for the duration of the survey.
- b. The Contractor must provide one laborer per water lance operator.
- c. The survey area must have a low point where water is allowed to collect. As the survey progresses, water shall be sprayed onto the liner. If the water exits the survey area and touches the surrounding earth ground, the survey shall not be performed. If water comes in contact with a conductor (metallic pipe or other object, batten strip, concrete, access ramp) that touches the surrounding earth ground,

the survey shall not be performed or it will be compromised. Often features such as rain flaps and berms are required to keep the water restrained to the lined survey area or away from grounded objects.

- d. The subgrade must contain sufficient moisture to conduct the survey. Five percent by weight or more shall be adequate. If the subgrade has been desiccated, the Contractor may also wet the subgrade with approximately 0.1 inches of water (2,700 gallons per acre) several days before the installation of the geomembrane. An equivalent recent rainfall would also suffice. Consultant shall be responsible for advising the County if wetting the subgrade will be necessary, within an appropriate timeframe to ensure the project remains on schedule.
- e. The survey area must be completely installed, including all necessary welds, patches, etc.
- f. The survey area shall be completely clean and free of soil, debris, or any other materials. The occasional sandbag is acceptable but shall be moved during the survey. An excessive amount of sandbags may require additional labor (supplied by the Contractor) to move.
- g. If it is determined the survey must take place at night, light plants must be available onsite for the duration of the water puddle survey.
- h. In double lined areas, a ground wire system (14 gauge minimum) must be installed under the secondary GCL and access to this ground wire must be maintained for the duration of both the water puddle and dipole surveys.

5.6.5. Dipole Method:

Upon completion of the operations layer, another geoelectric leak detection test shall be conducted utilizing the dipole method (ASTM D7007). The geoelectric leak detection testing shall be conducted by the Consultant. The Dipole method is used for geomembrane covered with soil, gravel or other porous material. A high voltage is applied to the soil covering the geomembrane and the power source is grounded to the earth beneath it.

5.6.5.1. Safety:

The Dipole method requires a high DC voltage (up to 350 Volts with currents reaching up to 1 Amp) be applied to the soil covering the geomembrane. All personnel working in or around the expansion cell area during the survey are at risk of electrocution if safety protocol is not followed. Consultant's personnel shall conduct a safety talk with all personnel working in the vicinity of the survey area before the power source is activated to establish protocol for working safely in and around the survey area. Sump pipes have the ability to carry the electric charge out of the survey area. Anyone working around piping that provides an electrical path to the survey area may be at risk and shall be included in the safety talk. Consultant shall ensure that the County's pertinent Landfill staff, including the Construction Manager, Landfill Manager(s) and Lead Worker are aware of the test at least a day prior to its execution so that they can ensure all necessary Landfill staff attend the safety talk and are aware of the potential dangers.

5.6.5.2. Site Preparation and Support

The Contractor shall be responsible for preparing the site for the dipole survey and providing additional support as described below. Consultant shall discuss all aspects of proper site preparation with the Contractor prior to work being done, and Consultant shall oversee and ensure that the following is being done properly and according to the Construction Specifications:

- a. The LCRS gravel, geotextile, and operations soil covering the geomembrane in the survey area shall be moisture conditioned in order to provide sufficient electrical conductivity. A homogeneous moisture content of at least one percent by weight shall be sufficient. In dry climates, the surface of the soil can desiccate, preventing contact with the geophysical probes of the dipole. In such conditions the surface of the cover soil shall be watered by a water truck immediately before performing the survey.
- b. The soil covering the geomembrane in the survey area shall be isolated from the surrounding soil outside of the expansion cell and any adjacent waste fill areas. This shall be achieved by leaving a strip of geomembrane exposed along the entire perimeter of the cell. Equipment and water truck access to the cell will be necessary to support the survey, however a soil access ramp would allow an excess of current to escape the charged soil of the cell. To provide equipment access while impeding current flow, the access ramp shall be bisected by a strip of geomembrane. To achieve this, the existing access road shall be excavated along the edge of the liner tie-in, a piece of geomembrane inserted, and soil pushed up against the geomembrane flap at the direction of Consultant's survey personnel. This work shall be performed while Consultant's personnel are on site to supervise the placement of the geomembrane and ensure electrical isolation.
- c. The calibration process shall require digging a hole down to the surface of the geomembrane to place the real or artificial leaks. The Contractor shall provide a backhoe or equivalent to excavate the cover soils down to the geomembrane. A water source shall be provided to rehydrate the soil as it is backfilled over the artificial leaks, preferably a water truck.
- d. The Contractor shall provide a backhoe or equivalent to uncover potential hole locations found by Consultant's survey personnel and also to remove and uncover the artificial or real leaks at the end of the survey.
- e. In double lined areas, a ground wire system (14 gauge minimum) shall be installed under the primary GCL and access to this ground wire shall be maintained for the duration of both the water puddle and dipole surveys.
- f. Hole locations shall be clearly marked by Consultant's leak location personnel as the survey proceeds. Hole locations can be pinpointed within a one foot accuracy. Consultant's personnel shall be onsite while the hole locations are excavated to assist in further pinpointing the source of the signal created by the hole. The final report,



including hole locations found during both surveys, shall be submitted by Consultant within two weeks of performing the dipole survey, unless otherwise requested by the County.

**5.7. Construction Completion (Task 3)**

**5.7.1. Final Completion and Acceptance:**

Once the project is substantially completed, Consultant's Lead CQA Monitor shall schedule a walk-through with the County to create a "punch list" of incomplete items to submit to the County. Consultant's CQA Monitor shall work with the Contractor in completing the items on the punch list. Upon completion of the items, Consultant shall submit a statement of completion to the County, including the date the project was accepted. At this time, Consultant shall also set up a site visit with the regulatory agency. Having the RWQCB physically inspect the completed work shall help facilitate their review of the final CQA Documentation Report. Consultant shall also invite the RWQCB to attend site visits during major milestones of construction.

**5.7.2. Preparation of Draft and Final Reports:**

The Construction Report shall be completed by the CQA Officer at the completion of the project and submitted to the RWQCB:

- a. The Consultant shall develop, submit, revise and complete a Construction Report, which shall contain all reports submitted concerning the placement of the containment system and conform with Section 20324 of Title 27 of the California Code of Regulations and the CQA Plan. This report shall be developed in accordance with the RWQCB requirements. This document shall summarize all construction activities performed under this project and shall provide evidence that the CQA Plan was implemented as proposed and that the construction proceeded in accordance with the design criteria, plans, and specifications.
- b. Two weeks prior to the completion of the construction project, Consultant shall submit an outline of the CQA documentation report to the County for review. At completion of the construction activities, a final CQA report shall be prepared and signed by the CQA Officer. Consultant shall submit a draft report to the County within 30 days of completion of the construction project. Within 15 days of receipt of the County's comments on the draft report, Consultant shall submit a final report to the County. The final report shall consist of a summary of the construction activities, modifications to the design if any, project CQA field and laboratory test procedures, photographic log, and a compilation of all of the project CQA documentation in an organized report format. In addition, the test-result template created and maintained throughout the project shall be included showing that the specified requirements were met.
- c. Once finalized, the Consultant shall submit the report to the RWQCB for inclusion in their records. Any comments from the regulatory agencies on the work performed by Consultant shall be addressed and/or changed by Consultant in the final report. In the event the construction report is rejected by the regulators, Consultant shall make any necessary changes at no cost to the County.
- d. Once all RWQCB comments are addressed, Consultant shall provide the

County an electronic PDF version and single hardcopy of the finalized report.

**5.8. Submittals**

- a. Daily Construction Reports.
- b. Monthly project progress reports.
- c. Construction Report at the completion of the project.
- d. Any other submittals as described in this Scope of Work and the CQA Plan.

**C. AGREEMENT PERIOD**

This Agreement shall commence upon the signing of this Agreement and continue until the work required herein is completed, unless previously terminated as provided herein or as otherwise agreed to in writing by the parties.

**D. PREVAILING WAGE**

Pursuant to Labor Code section 1771, the work under this Agreement is subject to the provisions of Article 2 (commencing with section 1770) of Chapter 1 of Part 7 of Division 2 of the Labor Code, and the Contractor shall pay all workers the general prevailing rate of per diem wages applicable to the work to be done for straight time, overtime, Saturday, Sunday and holiday work. These wage rates, which are set forth by the Director of the Department of Industrial Relations, are now on file with the Department of Parks and Recreation and are a part of this Agreement. For current rates go to the California Department of Industrial Relations webpage at the following:

<http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>

**REGISTRATION WITH DIR.** CONTRACTOR HEREBY ATTESTS THAT CONTRACTOR AND ALL SUBCONTRACTORS ARE REGISTERED WITH THE DEPARTMENT OF INDUSTRIAL RELATIONS ("DIR"). Senate Bill 854 requires that all contractors performing work on any public works project valued at more than \$1,000.00 must be registered with the DIR, and that all said contractors submit certified payroll reports directly to the DIR, unless excused. FAILURE TO COMPLY WITH THIS SECTION CONSTITUTES A MATERIAL BREACH OF THIS CONTRACT.

**E. COMPENSATION**

1. The following are guidelines regarding invoicing procedures:
  - 1.1. Accounting time associated with preparing Invoices, Work in Progress (WIP) and Accounts Receivable (AR) reports, and other necessary tasks, is non-billable.
  - 1.2. Meetings held between County staff and Consultant's staff to discuss Consultant's non-performance or lack thereof shall not be billable to the County.
  - 1.3. If any personnel working on this contract are promoted, their billing rate will remain the same as indicated on the approved schedule of fees submitted with the initial contract or addendum thereafter.
  - 1.4. The Consultant shall bill all active work orders on a monthly basis and shall provide a billing summary sheet of all work orders as an attachment. Each work order invoice shall include a brief description of the work completed to support the amount being invoiced.
  - 1.5. Maintenance and Weekly Submission of Certified Payroll Records.

- a. The Consultant and each of its sub-consultants shall maintain accurate, complete and current payroll records as required by the Labor Compliance Programs (LCP). Each payroll record shall contain or be verified by a written declaration as required by Labor Code Section 1776. During the progress of the prevailing wage work, until Final Payment is due, the consultant and its sub-consultants shall maintain and submit Certified Payroll Records on a weekly basis. No later than 5:00 P.M. on each Monday during the Work, the consultant shall submit Certified Payroll Records for the consultant and its sub-consultants for all persons providing or performing any Work in the immediately preceding week. The original copies of Certified Payroll Records shall be submitted by the consultant to the Contract Administrator or such other person or entity as directed by the County; concurrently with the consultant's delivery of the original copies, a duplicate copy of each Certified Payroll record submitted by the consultant to the Contract Administrator shall be transmitted to the County's Department of Environmental Resources. The Certified Payroll Records maintained and submitted hereunder shall be in strict conformity with requirements established in the LCP. A material obligation of the consultant under the Contract Documents is the consultant's and its sub-consultant's strict compliance with requirements of the LCP relating to maintenance and submission of Certified Payroll Records. The consultant's submittal of weekly Certified Payroll Records in strict conformity with requirements of the LCP is an express condition precedent to the County's obligation to disburse any Progress Payment to the consultant and the consultant's entitlement to receipt of any Progress Payment.

- 1.6. The Consultant shall be compensated for the services provided under this Agreement as follows:

- 1.6.1. Consultant shall be compensated for the completion of the fixed fee portions of the services described in Exhibit A, and the not to exceed amounts for each task as set forth below set forth in Exhibit C attached hereto and, by this reference, made a part hereof. The not to exceed lump sum amounts for each task are comprised of the hourly billable rates set forth in Exhibit C. In addition to the aforementioned fees, Consultant shall be reimbursed for the following expenses, plus any expenses agreed to by the parties as set forth in the attached Fee Schedule – Exhibit C attached hereto, that are reasonable, necessary and actually incurred by the Consultant in connection with the services:

- (a) Any filing fees, permit fees, or other fees paid or advanced by the Consultant;
- (b) Expenses, fees or charges for printing, reproduction or binding of documents at actual costs; and
- (c) Travel expenses shall be reimbursed in accordance with the County's travel policy, which is incorporated herein by reference. No mark-up is allowed on travel reimbursement.

- 1.6.2. Fees plus reimbursable expenses shall not exceed the amounts set forth in Exhibit C and a copy of the original invoice for the items listed in a, b or c above shall be attached to the invoice submitted to the County for reimbursement. Payments shall be based upon work documents submitted by the Consultant to the County and accepted by the County, as being satisfactory to County's needs, not work in process. The County shall not pay a markup on any of the above items listed in a, b or c or any item identified in Exhibit C. Items such a telephone, fax, postage or freight are already included in the billable hourly rate.

- 1.6.3. The County may retain ten percent (10%) of all periodic or progress payments

made to the Consultant until completion and acceptance of all work tasks and County shall have right to withhold payment from Consultant for any unsatisfactory service until such time service is performed satisfactorily.

**1.6.4. INVOICE REMIT TO:**

Consultant shall submit a detailed invoice for work actually completed. The invoice is to include but not be limited to the following information: hours worked by Consultant's Staff, the title of the Staff, billable rate and reimbursable items that are reasonable, necessary and actually incurred by the Consultant in connection with the services.

The remit to address is:

Stanislaus County  
Department of Environmental Resources  
Attention: Stephanie Musso  
3800 Cornucopia Way, Suite C  
Modesto, CA 95358

**F. REPRESENTATIVES**

The County's representatives are Don Hamaguchi, Project Manager, (209) 606-2527, and Gabe Avila, Landfill Manager I, (209) 408-2867.

**G. PROTECTION OF EXISTING FACILITIES**

Consultant shall take every precaution to protect all public and private property during the performance of this Agreement. Any damages caused by Consultant's personnel or equipment will be promptly repaired to the condition existing before the damage or be replaced. All such costs for such repairs or replacement shall be the sole responsibility of the Consultant.

**H. SAFETY REQUIREMENTS**

All services and merchandise must comply with current California State Division of Industrial Safety Orders and OSHA.

**I. WORK SCHEDULE**

Consultant is obligated to perform in a timely manner the services and work provided for under this Agreement and the County hereby gives the Consultant notice to proceed with the work as of the effective date of this Agreement. It is understood by Consultant that the performance of these services and work shall require the Consultant to perform the services and work in conformance with a work schedule agreed to by the parties in Exhibit D attached hereto and made a part of this Agreement.

**J. COUNTERPARTS**

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

## EXHIBIT B

### Insurance Requirements for Professional Services

Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Consultant, its agents, representatives, or employees.

#### MINIMUM SCOPE AND LIMIT OF INSURANCE

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability:** If the Consultant or the Consultant's officers, employees, agents, representatives or subcontractors utilize a motor vehicle in performing any of the work or services under the Agreement Insurance Services Office Form Number CA 0001 covering, Code 1 (any auto), or if Consultant has no owned autos, Code 8 (hired) and 9 (non-owned), with limit no less than \$1,000,000 per accident for bodily injury and property damage.
3. **Workers' Compensation** insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.  
(Not required if consultant provides written verification it has no employees)
4. **Professional Liability (Errors and Omissions)** Insurance appropriate to the Consultant's profession, with limits not less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate.

If the Consultant maintains broader coverage and/or higher limits than the minimums shown above, the County requires and shall be entitled to the broader coverage and/or higher limits maintained by the Consultant. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the County.

#### ***Application of Excess Liability Coverage***

Consultants may use a combination of primary, and excess insurance policies which provide coverage as broad as ("follow form" over) the underlying primary policies, to satisfy the Required Insurance provisions.

#### ***Other Insurance Provisions***

The insurance policies are to contain, or be endorsed to contain, the following provisions:

***Additional Insured Status***

The County, its officers, officials, employees, agents and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Consultant including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Consultant's insurance (at least as broad as ISO Form CG 20 10 11 85 or both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 forms if later revisions used).

***Primary Coverage***

For any claims related to this contract, the **Consultant's insurance coverage shall be primary insurance primary coverage at least as broad as ISO CG 20 01 04 13 as respects the County, its officers, officials, employees, agents and volunteers.** Any insurance or self-insurance maintained by the County, its officers, officials, employees, agents or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

**Reporting:** Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the County or its officers, officials, employee's, agents or volunteers.

***Notice of Cancellation***

Each insurance policy required above shall state that **coverage shall not be canceled, except with notice to the County.**

***Waiver of Subrogation***

Consultant hereby grants to County a waiver of any right to subrogation which any insurer of said Consultant may acquire against the County by virtue of the payment of any loss under such insurance. Consultant agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the County has received a waiver of subrogation endorsement from the insurer.

***Self-Insured Retentions***

Self-insured retentions must be declared to and approved by the County. The County may require the Consultant to provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or County.

***Acceptability of Insurers***

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the County.

***Claims Made Policies***

If any of the required policies provide coverage on a claims-made basis:

1. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.

2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

**Verification of Coverage**

Consultant shall furnish the County with a copy of the policy declaration and endorsement page(s), original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the County before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Consultant's obligation to provide them. The County reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

**Subcontractors**

Consultant shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Consultant shall ensure that County is an additional insured on insurance required from subcontractors.

**Special Risks or Circumstances**

County reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

**Insurance Limits**

The limits of insurance described herein shall not limit the liability of the Consultant and Consultant's officers, employees, agents, representatives or subcontractors. Consultant's obligation to defend, indemnify and hold the County, its officers, officials, employees, agents and volunteers harmless under the provisions of this paragraph is not limited to or restricted by any requirement in the Agreement for Consultant to procure and maintain a policy of insurance.

APPROVED AS TO INSURANCE CONTENT:

Stanislaus County

Chief Executive Office – Risk Management Division

By: 

Name: Kevin Watson

Title: Liability & Insurance Manger

Date: December 2, 2016

Vendor: Geo-Logic

**EXHIBIT C**

**FEE SCHEDULE**

**1. PRICE SCHEDULE:**

The Consultant shall provide all the supervision, labor, equipment, materials and tools necessary to perform the services identified in Exhibit A – Scope of Work and in accordance with the rate schedule below. The below fee schedule is in effect through the end of this Agreement.

**2. RATES**

The Consultant shall be compensated on a time and material basis based on the hourly rates, and the not to exceed amounts for each task as set forth below. The following hourly billable rates include: labor, benefits, taxes, overhead/general & administrative (G&A), profit, and ancillary charges such as copies, faxes, telephones, postage, paper clips, binders, company cars, fuel, insurance, vehicle or equipment maintenance, cellular phone charges, computer charges (CADD, word-processing, mapping), etc.

<b><u>PROFESSIONAL STAFF</u></b>	<b><u>UNIT RATE</u></b>
Staff Professional .....	\$112.00/Hour
Project Professional I .....	138.00/Hour
Project Professional II .....	163.00/Hour
Senior Professional .....	178.00/Hour
Supervising Professional.....	203.00/Hour
Principal Professional.....	224.00/Hour
Court Appearance (Expert Witness, Deposition, etc.; four-hour minimum) ...	2 x Hourly Rate
<b><u>FIELD/LABORATORY STAFF</u></b>	
Technician I .....	80.00/Hour
Technician II .....	87.00/Hour
Senior Technician (or Minimum Prevailing Wage) .....	97.00/Hour
Supervising Technician .....	112.00/Hour
Managing Technician .....	128.00/Hour
<b><u>SUPPORT STAFF</u></b>	
CADD/Designer.....	112.00/Hour
CADD Operator/Geotechnical Draftsperson .....	92.00/Hour
Geotechnical Clerk/Typist .....	59.00/Hour
Word Processor.....	82.00/Hour

\*Overtime Premium is 35% of PERSONNEL CHARGE

<b><u>EQUIPMENT CHARGES</u></b>	
BAT Permeameter.....	200.00/Day
Compaction Testing Equipment & Supplies.....	50.00/Day
Peel & Shear Strength Apparatus (FML Seams) .....	900.00/Month
Portable Laboratory (8' x 32' trailer) with equipment .....	1,200/Month
Portable Laboratory (mobilization / demobilization) .....	1,500.00
ReMi/Refraction Seismograph .....	600.00/Day
Sealed Single Ring Infiltrometer (SSRI) .....	200.00/Day or 750.00/Month
Sealed Double Ring Infiltrometer (SDRI) .....	Call for Quote
Slope Inclinator.....	250.00/Day



**EXPENSES**

Vehicle Use for Field Services .....	14.00/Hour or 320.00/week
Soil Sampling Equipment & Drilling Supplies .....	5.00/Hour
Groundwater Sampling Equipment and Supplies .....	15.00/Hour
Per Diem.....	Per County Travel Policy
Outside Services (Consultants, Surveys, Chemical lab Tests, etc.) .....	Cost + 15%
Reimbursables (Maps, Photos, Permits, Expendable Supplies, etc.) .....	Cost
Outside Equipment (Drill Rig, Backhoe, Monitoring Equipment, etc.).....	Cost + 15%

**PERMITS, FEES AND BONDS**

The costs of all permits, fees, and performance bonds required by government agencies are to be paid by the County, unless stated otherwise in an accompanying proposal.

**INSURANCE**

Geo-Logic Associates, Inc. carries workers' compensation, comprehensive general liability and automobile with policy limits normally acceptable to most clients. The cost for this insurance is covered by the fees listed in this schedule.

<b><u>SOIL TESTING</u></b>	<b><u>TEST METHOD</u></b>	<b><u>UNIT RATE</u></b>
Atterberg Limits (LL, PL, and PI).....	D4318.....	\$150.00/Test
California Bearing Ratio (excluding moisture-density curve) ...	D1883.....	200.00/Point
Chloride Content .....		50.00/Test
Corrosivity Series (resistivity, pH, sulfate, chloride) .....		170.00/Test
Consolidation Test (w/o rate data—up to 8 loading increments) D2435.....	D2435.....	150.00/Test
Consolidation Test (single point).....	D2435.....	95.00/Test
Consolidation Test Rate Data (per load increment) .....	D2435.....	60.00/each
Direct Shear Test (at natural moisture) .....	D3080.....	65.00/Point
Direct Shear Test (saturated – strain rate 0.0084 inch/min.) ...	D3080.....	75.00/Point
Direct Shear Test (saturated recycled- strain rate 0.0084 inch/min)D3080.....	D3080.....	120.00/Point
Direct Shear Test (consolidated drained) .....	D3080.....	150.00/Point
Direct Shear Test (consolidated drained, residual).....	D3080.....	200.00/Point
Direct Shear Test (large shear box, 12 x 12) .....	D3080.....	270.00/Point
Expansion Index Test .....	D4829.....	125.00/Test
Expansion Index (cement or lime treated sample).....	D4829.....	175.00/Test
Grain-Size Mechanical Analysis: Sand-Clay, w/ Hydrometer ...	D422/D6913 .....	150.00/Test
Grain-Size Mechanical Analysis: Gravel-Clay, w/ Hydrometer .	D422/D6913 .....	190.00/Test
Harvard Miniature Compaction Test .....		235.00/Test
Mechanical Analysis, Percent Passing #200 .....	D1140/C117 .....	75.00/Test
Mechanical Analysis - Sand or Gravel (no wash) .....	D422/C136 .....	85.00/Test
Mechanical Analysis - Sand and Gravel .....	D422/C136 .....	155.00/Test
Mechanical Analysis - Sand or Gravel .....	D422/C136 .....	120.00/Test
Mechanical Analysis - Minus 3" to 200 Sieve, Full Sieve.....	D422/C136 .....	155.00/Test
Moisture Content.....	D2216/D4643 .....	16.00/Test
Moisture Density Curve for Compacted Fill (4-inch Mold) .....	D698.....	150.00/Test
Moisture Density Curve for Compacted Fill (6-inch Mold) .....	D698.....	175.00/Test
Moisture-Density Curve for Compacted Fill (4-inch Mold) .....	D1557.....	165.00/Test
Moisture-Density Curve – Compacted Fill (6-inch Mold) .....	D1557.....	200.00/Test
Moisture-Density Curve: Lime or Cement Treated (4-inch Mold)...	D1557.....	210.00/Test
Moisture-Density Curve: Lime or Cement Treated (6-inch Mold)...	D1557.....	250.00/Test
Moisture-Density Single Point.....	T272 .....	80.00/Test
Moisture-Density Curve .....	Cal 216.....	175.00/Test
Organic Matter .....	D2974.....	85.00/Test
Permeability (falling head) .....	CAL220 .....	180.00/Test
Permeability (flexible wall) .....	D5084 .....	300.00/Test
Permeability (rigid wall- constant head pressure, 2" to 8" mold)...	D2434 .....	250.00/Test
Permeability (rigid wall- constant head pressure, 12" mold) ....	D2434.....	410.00/Test
Permeability (additional consolidation stresses).....		95.00/stage

<b>SOIL TESTING (CONTINUED)</b>	<b>TEST METHOD</b>	<b>UNIT RATE</b>
Permeability (air)	D6539	325.00/Test
Pinhole Dispersion Test; 4 increments (remold sample)	D4647	400.00/Test
Resistance Value	D2844	210.00/Test
Resistance Value – Lime or Cement Treated	D2844/CA301	260.00/Test
Resistivity & pH Test	Cal 532 or 643	90.00/Test
Sand Equivalent	Caltrans 217/D2419	75.00/Test
Soil pH	D4972	20.00/Test
Specific Gravity - Fine-Grained Soils	D854	75.00/Test
Sulfate Content		50.00/Test
Triaxial Compression Test (CD)	D4767 (modified)	575.00/Point
Triaxial Compression Test (CU with pore pressure)	D4767	425.00/Point
Triaxial Compression Test (UU)	D2850	125.00/Set
Triaxial Compression Test [Stage (Progressive) Test; CU]	D4767	1,000.00/Set
Unconfined Compression Test (undisturbed sample)	D2166	90.00/Test
Unit Dry Weight and Moisture Content (undisturbed sample)	D7263/D2216	22.00/Test

All test methods are ASTM unless otherwise noted.

Special sample preparation and laboratory testing not listed above will be charged at applicable personnel rates.

All laboratory test rates are for standard turn-around time and normal reporting procedures. Rush orders will be subject to a 25 percent premium. Manpower requirements or test protocol may preclude the granting of a rush request.

<b>AGGREGATE TESTING</b>	<b>TEST METHOD</b>	<b>UNIT RATE</b>
Clay Lumps and Friable Particles	C142	\$80.00/Test
Crushed Particles (Fractured Faces)		95.00/Test
Durability Index – Fine	D3744	120.00/Test
Durability Index – Coarse	D3744	140.00/Test
Flat and Elongated Particles	CRD119, 120	105.00/Test
Injurious Organic Matter	C40	60.00/Test
Insoluble Residue in Carbonate Aggregates	D3042	275.00/Test
Lightweight Pieces in Aggregate	C123	95.00/Test
Los Angeles Abrasion Test (500 revolutions)	C131	160.00/Test
Los Angeles Abrasion Test (1000 revolutions)	C535	180.00/Test
Mechanical Analysis - Sand or Gravel (dry sieve)	C136	70.00/Test
Mechanical Analysis (wash 200 sieve)	C117	65.00/Test
Mechanical Analysis (fine with wash 200 sieve)	C136	100.00/Test
Rapid Determination of Carbonate Content of Rock	4373	120.00/Test
Sample Crushing		85.00/Hour
Sand Equivalent	D2419	75.00/Test
Specific Gravity, Bulk, SSD with Absorption	C128/C127	110.00 Each
Sulfate Soundness, per sieve size	C88	135.00/Test

<b>ROCK TESTING</b>	<b>TEST METHOD</b>	<b>UNIT RATE</b>
Density	D7263	\$35.00/Test
Density, Porosity, Specific Gravity, Water Content		110.00/Test
Indirect Tensile Strength (Brazilian), Single Break	D3967	55.00/Test
Indirect Tensile Strength (Brazilian), 10-15 Breaks	D3967	210.00/Test
Point Load Index, Single Break	D5731	35.00/Test
Point Load Index, 10-15 Breaks	D5731	180.00/Test
Rip-Rap (wet / dry, 10 cycles)	D5318	1,000.00/Test
Rip-Rap (freeze / thaw, 10 cycles)	D5312	800.00/Test
Rip-Rap (specific gravity)	D6473	110.00/Test
Rip-Rap Soundness (sodium)	D5240	400.00/Test
Rock Joint Direct Shear		260.00/Point
Rock Joint Direct Shear, additional normal load		95.00/Test

<b><u>ROCK TESTING (CONTINUED)</u></b>	<b><u>TEST METHOD</u></b>	<b><u>UNIT RATE</u></b>
Slake Durability .....	D4644 .....	200.00/Test
Triaxial Compression, with Young's modulus and Poisson's ratio .....		495.00/point
Uniaxial Strength (peak only; 2.5" maximum) .....	D7012 .....	130.00/Test
Uniaxial Strength (with stress-strain curve) .....		call for quote
Uniaxial Strength (with stress-strain curve, add modulus and Poisson ratio) .....		call for quote
Rock preparation, cutting, and grinding .....		85.00/Hour

All test methods are ASTM unless otherwise noted.

Special sample preparation and laboratory testing not listed above will be charged at applicable personnel rates.

All laboratory test rates are for standard turn-around time and normal reporting procedures. Rush orders will be subject to a 25 percent premium. Manpower requirements or test protocol may preclude the granting of a rush request.

<b><u>GEOSYNTHETIC MATERIALS</u></b>	<b><u>TEST METHOD</u></b>	<b><u>UNIT RATE</u></b>
<b><i>Seam Coupon Series (thickness, peel, and shear)</i></b>		
Set of 5 each (Quantity 1-10) .....	D6392 .....	\$75.00/Test
Set of 5 each (Quantity 10 or more) .....	D6392 .....	55.00/Test
Asperity Height .....	GRI GM12 .....	35.00/Test
Liner Puncture Testing up to 350 psi .....		260.00/Test
Liner Puncture Testing over 350 psi .....		410.00/Test

***Large Scale Direct Shear (ASTM D5321 and D6321)***

Geosynthetic vs Geosynthetic – Method A .....		210.00/Point
Soil vs Geosynthetic Friction – Method B .....		260.00/Point
GCL Internal Shear .....		310.00/Point
Shear Speed (<0.04) .....		110.00/Point
(Shear rate dependent on soil drainage characteristics and engineering specifications)		
Substrate Remolding Fee .....		60.00/Test
Additional Saturation Time (>24 hours) .....		60.00/Day

***GCL Testing***

Index Flux Testing .....	D5887 .....	270.00/Test
Fluid Loss .....	D5891 .....	75.00/Test
Swell Index .....	D5890 .....	70.00/Test
Mass per Unit Area .....	D5993 .....	70.00/Sample
Custom Liner Testing .....		call for quote

All test methods are ASTM unless otherwise noted.

Special sample preparation and laboratory testing not listed above will be charged at applicable personnel rates.

All laboratory test rates are for standard turn-around time and normal reporting procedures. Rush orders will be subject to a 25 percent premium. Manpower requirements or test protocol may preclude the granting of a rush request.

**3. PROJECT PRICE**

The below project pricing is devised to allow the County the ability to identify costs associated with the frequency of tasks performed in a given calendar year. The Consultant shall be compensated based on the billable hourly rates set forth above to perform the work associated with each task, not to exceed the amounts listed below. Maximum Total Task Price includes fees, travel expenses and reimbursable expenses that are reasonable, necessary and actually incurred by the Consultant in connection with the services. Travel expenses shall be reimbursed in accordance with the County's travel policy.

3.1 A Summary breakdown of the Project fees is as follows

TASK	TASK DESCRIPTION	MAXIMUM TOTAL TASK PRICE
1	Project Management and Meetings	\$24,615
2	Construction Quality Assurance Services	\$98,007
3	Final Certification Report Preparation	\$10,252
<b>PROJECT TOTAL</b>		<b>\$132,874</b>

3.2 Below is a detailed breakdown of the costs for Tasks 1-3:

<b>TASK 1</b>				
Personnel Title	Type of Unit	No. of Units	Rater Per Units	Subtotal Cost (\$)
Project Principal (Supervising Professional)	Hrs	20.00	\$203.00	\$4,060.00
CQA Officer (Senior Professional)	Hrs	110.00	\$178.00	\$19,580.00
<b>Total Personnel Hrs</b>	<b>Hrs</b>	<b>130.00</b>		
<b>Subtotal Personnel Costs Task 1</b>				<b>\$23,640.00</b>
Equipment and Direct Expenses	Type of Unit	No. of Units	Rater Per Units	Subtotal Cost (\$)
Travel Costs	Each	13.00	\$75.00	\$975.00
<b>Subtotal Equipment and Direct Expenses</b>				<b>\$ 975.00</b>
<b>TOTAL TASK 1</b>				<b>\$24,615.00</b>

<b>TASK 2</b>				
Personnel Title	Type of Unit	No. of Units	Rater Per Units	Subtotal Cost (\$)
Lead CQA Monitor (Senior Tech) regular time	Hrs	432.00	\$97.00	\$41,904.00
Lead CQA Monitor - overtime*	Hrs	108.00	\$131.00	\$14,148.00
<b>Total Personnel Hrs</b>	<b>Hrs</b>	<b>540.00</b>		
<b>Subtotal Personnel Costs Task 1</b>				<b>\$56,052.00</b>
Equipment and Direct Expenses	Type of Unit	No. of Units	Rater Per Units	Subtotal Cost (\$)
Personnel/Equipment Mob/demob	Each	1.00	\$250.00	\$250.00
Field Lab Equipment	Weekly	11.00	\$350.00	\$3,850.00
Punch Press/Tensiometer	Weekly	4.00	\$225.00	\$900.00
Nuclear Density Gauge	Daily	54.00	\$50.00	\$2,700.00
On-Site Vehicle (Lead CQA Monitor)	Daily	54.00	\$85.00	\$4,590.00
Per Diem (Lead CQA Monitor)	Daily	54.00	\$110.00	\$5,940.00
Leak Location Survey - Dipole Method	lump sum	1.00	\$8,410.00	\$8,410.00
Leak Location Survey - Water Puddle Method	lump sum	1.00	\$8,410.00	\$8,410.00
<i>GCL Conformance Testing</i>				
Index Flux (D5887)	test	7.00	\$180.00	\$1,260.00
Grab Strength (D4632)	test	7.00	\$45.00	\$315.00
Mass Per Unit Area (5993)	test	7.00	\$25.00	\$175.00
In plant sampling and shipping	test	7.00	\$105.00	\$735.00
<i>HDPE Conformance Testing</i>				
Carbon Black Content (D4218 or D1603)	test	7.00	\$25.00	\$175.00
Tensile Strength (D638 or D6693)	test	7.00	\$45.00	\$315.00
Thickness (D5994)	test	7.00	\$15.00	\$105.00
Density (D1505)	test	7.00	\$20.00	\$140.00
Asperity Height (GRI GM12)	test	7.00	\$15.00	\$105.00
Puncture Resistance (D4833)	test	7.00	\$45.00	\$315.00
Tear Resistance (D1004)	test	7.00	\$40.00	\$280.00
In plant sampling and shipping	test	7.00	\$70.00	\$490.00

<b>TASK 2 (CONTINUED)</b>				
<i>Geocomposite Conformance Testing</i>				
Thickness (D5199)	test	2.00	\$15.00	\$30.00
Density (D1505)	test	2.00	\$20.00	\$40.00
Carbon Black Content (D1603)	test	2.00	\$25.00	\$50.00
Routine Transmissivity (D4716)	test	4.00	\$80.00	\$320.00
Ply Adhesion (GRI GC7)	test	2.00	\$70.00	\$140.00
In plant sampling and shipping	test	2.00	\$175.00	\$350.00
<i>Geotextile Conformance Testing</i>				
Mass Per Unit Area (D5261)	test	2.00	\$25.00	\$50.00
Grab Strength (D4632)	test	2.00	\$45.00	\$90.00
Permittivity (D4491)	test	2.00	\$80.00	\$160.00
AOS (D4751)	test	2.00	\$95.00	\$190.00
Puncture Resistance (D4833)	test	2.00	\$45.00	\$90.00
In plant sampling and shipping	test	2.00	\$80.00	\$160.00
<i>Drainage Layer/Sump Gravel Material</i>				
Hydraulic Conductivity	test	1.00	\$225.00	\$225.00
<i>Soil Preparation Layer</i>				
Hydraulic Conductivity	test	2.00	\$300.00	\$600.00
<b>Subtotal Equipment and Direct Expenses</b>				<b>\$41,955.00</b>
<b>TOTAL TASK 2</b>				<b>\$98,007.00</b>

\*Overtime is defined as every hour over 8 hours per day (40 hours per week) up to 12 hours per day

<b>TASK 3</b>				
<b>Personnel Title</b>	<b>Type of Unit</b>	<b>No. of Units</b>	<b>Rater Per Units</b>	<b>Subtotal Cost (\$)</b>
Project Principal (Supervising Professional)	Hrs	4.00	\$203.00	\$812.00
CQA Officer (Senior Professional)	Hrs	24.00	\$178.00	\$4,272.00
Lead CQA Monitor (Senior Technician)	Hrs	24.00	\$97.00	\$2,328.00
Staff Engineer	Hrs	8.00	\$112.00	\$896.00
Clerk	Hrs	16.00	\$59.00	\$944.00
<b>Total Personnel Hrs</b>	<b>Hrs</b>	<b>76.00</b>		
<b>Subtotal Personnel Costs Task 1</b>				<b>\$9,252.00</b>
<b>Equipment and Direct Expenses</b>	<b>Type of Unit</b>	<b>No. of Units</b>	<b>Rater Per Units</b>	<b>Subtotal Cost (\$)</b>
Report Preparation (reproduction and shipping)	lump sum	1.00	\$1,000.00	\$1,000.00
<b>Subtotal Equipment and Direct Expenses</b>				<b>\$1,000.00</b>
<b>TOTAL TASK 3</b>				<b>\$10,252.00</b>
<b>TOTAL NOT TO EXCEED AMOUNT</b>				<b>\$132,874.00</b>

3.3. Consultant estimates that the scope of work described in Exhibit A shall be completed for a **not-to-exceed cost of \$132,874**. Consultant commits that they can complete the proposed scope of work for this amount. If changes in the scope of work occur, Consultant shall notify the County prior to incurring any additional costs and wait for authorization to proceed.

3.4. The Detailed Cost proposal is based on the following assumptions:

- a. Field Services will be required for 54 working days (approximately 11 weeks).
- b. The Work Schedule shall be 10 hours per day, 5 days per week.
- c. Consultant shall provide a Lead CQA Monitor during the entire construction period.

- d. Regular and overtime hourly rates for the Lead CQA Monitor have been developed based on the most current California Prevailing Wage rate determination.
- e. The office/laboratory is to be provided by the Contractor.
- f. Laboratory testing of material to be performed off site includes conformance testing of the geosynthetics and the hydraulic conductivity testing of the subgrade preparation layer and gravel material. These tests shall be a unit rate cost as shown above.
- g. Quantity of off-site testing required for the geosynthetics is based on the quantity table provided in Addendum No. 1 of RFP 16-46-DQ.
- h. The cost for the leak location surveys has been provided as a lump sum as shown above.

**EXHIBIT D**  
**PROJECT SCHEDULE**

The following is a timeline for which the tasks identified below shall be performed or completed:

Consultant shall closely follow the Contractor's schedule. Contract shall be in effect until all work under this Agreement has been completed.